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EDWARD P. ARTHUR, *Commissioner of Mines*

ANNUAL REPORT

for the Year 1941

THE BRADFORD-ROBINSON PTG. CO., DENVER

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1876

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LETTER OF TRANSMITTAL

To His Excellency,
THE HONORABLE RALPH L. CARR,
Governor of Colorado.

Sir: In compliance with Chapter 110, Section 285 of the Colorado Statutes Annotated 1935, I have the honor to transmit herewith the Annual Report of the State Bureau of Mines for the year 1941.

Respectfully submitted,

EDWARD P. ARTHUR,
Commissioner of Mines.

State Capitol,
Denver, Colorado,
June 15, 1942.

PERSONNEL OF THE BUREAU OF MINES OF THE STATE OF COLORADO

EDWARD P. ARTHUR, Commissioner of Mines	Denver
GEORGE BECKER, Inspector, District No. 1	Denver
FRED E. THEOBALD, Inspector, District No. 2	Victor
R. J. MURRAY, Inspector, District No. 3	Salida
D. C. McNAUGHTON, Inspector, District No. 4	Silverton
ETHEL F. McCARTHY, Chief Clerk	Denver
BETTY M. O'NEIL, Stenographer and Clerk	Denver
MARGARET F. SMITH, Part Time Stenographer and Clerk	Denver

DISTRICTS OF INSPECTION

DISTRICT NO. 1—Adams, Arapahoe, Boulder, Clear Creek, Denver, Gilpin, Grand, Jackson, Jefferson, Larimer, Logan, Moffat, Morgan, Phillips, Routt, Sedgwick, Summit, Washington, Weld and Yuma counties, and that part of Park county lying north and west of a line drawn from the southwest corner of Jefferson county to the southwest corner of Park county.

DISTRICT NO. 2—Baca, Bent, Cheyenne, Crowley, Custer, Douglas, Elbert, El Paso, Fremont, Huerfano, Kiowa, Kit Carson, Las Animas, Lincoln, Otero, Prowers, Pueblo and Teller counties and the part of Park county lying south and east of a line drawn from the southwest corner of Jefferson county to the southwest corner of Park county.

DISTRICT NO. 3—Alamosa, Chaffee, Conejos, Costilla, Eagle, Garfield, Lake, Mineral, Pitkin, Rio Blanco and Rio Grande counties, and that portion of Saguache county lying south and east of the main Continental Divide, and the extreme northwest part of Gunnison county, lying north of the 39th degree of latitude.

DISTRICT NO. 4—Archuleta, Delta, Dolores, Hinsdale, La Plata, Mesa, Montezuma, Montrose, Ouray, San Juan and San Miguel counties and all of Gunnison county, except the extreme northwest corner lying north of the 39th degree of latitude, also that part of Saguache county lying north and west of the main Continental Divide.

The description of these districts is the same as designated by Commissioner Joyce on August 2, 1928, and will remain the same until altered by the legislature or the Commissioner.

INTRODUCTION

The activities of the Bureau of Mines during 1941 were confined to the usual routine, no funds for any special work being provided.

The inspectors visited practically all of the operating metal mines, quarries, mills, smelters, highway tunnels and other excavations at least once during the year. Most of the larger operations were inspected more than once.

The Commissioner made every possible effort to assist the inspectors and visited all the properties where fatal accidents occurred. The object of these inspections is to eliminate, so far as possible, unsafe conditions and practices and to prevent recurrence of fatal accidents in the operation of the properties. In general these efforts were met with lively cooperation on the part of the operators.

The Commissioner and inspectors are anxious to assist the mining industry in every legitimate manner both in safety matters and general operation of the properties, and wish to be called upon whenever their services can be used.

Inquiries regarding the mines and the mineral resources of the state and questions regarding the demand and market for the less common mineral products and the nonmetallics are constantly coming into the Bureau. Every effort is made to furnish the desired information. The United States Bureau of Mines, the Colorado Mining Association, the U. S. Geological Survey and the Colorado Geological Survey Board have given some very helpful cooperation.

The Commissioner wishes to express his appreciation of the loyal and efficient services that have been rendered by the entire personnel of the Bureau during the past year.

It is with great regret that we note the passing of our good inspector Herrick McLeod of District 2, who passed away on June 21, 1941, while in performance of his duties.

Michael H. Newman, who for many years was assistant curator of the Mineral Exhibit, passed away June 20, 1941.

The passing of John T. Joyce, who for 16 years held the office of State Mine Commissioner, also caused great regret. Mr. Joyce left us in the early summer of 1942 at the ripe age of nearly ninety years.

MINING IN COLORADO IN 1941

By Edward P. Arthur
Commissioner of Mines

Mining in Colorado during 1941 was on the changing order. The past year may be regarded as the transition period in mining caused by war activities throughout the world. The change was from the usual production of minerals, especially those of the non-defense character, such as silver, gold and others of like nature, to the beginning of a hectic output of war minerals, including molybdenum, vanadium, tungsten and even lead, copper and zinc, as well as others, among which were some nonmetallics. This condition naturally caused a decrease in the non-defense output and, while this decrease was not very marked for the entire year, the conditions were quite evident and when in the last month of the year our own country was suddenly brought into the actual conflict, the results were very noticeable. Even before we were involved there was a very considerable increase in the production of several of these war minerals.

The various minerals which are found throughout the state may be divided into three classes:

First. Those that cannot be placed in the defense class, chiefly gold and silver.

Second. The defense minerals for making the necessary war equipment, such as molybdenum, vanadium and tungsten. To these may be added lead, zinc and copper.

Third. Ores containing both non-defense and defense minerals, such as lead, zinc, copper and other metals with which are associated the precious metals, such as gold and silver.

Gold production showed a small increase over the previous year due partly to the higher grade of the Cripple Creek ore, caused by some of the lower levels in the mines of that district being drained by the new Carlton tunnel and to the increase of placer mining throughout the state.

The silver output dropped off somewhat, due principally to a decrease in production of this metal by the Empire Zinc Company.

Lead production showed some increase during the year,

Copper dropped quite heavily in the amount produced. This was due chiefly to the decrease in output of this metal by the Empire Zinc Company.

Zinc production in 1941 was more than three times greater than that of the previous year, and was due principally to the resumption of zinc mining at Gilman.

Molybdenum showed quite a heavy increase in output for the year, due to the demand for war and defense purposes.

Tungsten production in 1941 exceeded that of 1940 to some extent, with a better price prevailing.

Vanadium made quite rapid strides in production for 1941 over the several previous years and it is understood that the price was better than it had been for some time.

Manganese production just about held its own with a good deal of exploration work being done looking for higher grade ores.

Nonmetallics showed quite an increase in amount, though the price in many cases was still low.

The production of minerals in the state will be taken up separately in a more detailed report.

Gold

The gold output for the past year was slightly larger than that of 1940 and amounted to 380,029 ounces of the value of $13,301,015, taken from 579 lode mines and 324 placers, while the production for 1940 was 367,336 ounces of the value of $12,856,760, taken from 691 lode mines and 439 placers. The Cripple Creek district (Teller county) gave a small increase in tonnage over the previous year, with an increase in value of 55c per ton. In the latter part of the year the Golden Cycle Corporation, which treats practically all of the Cripple Creek ore in its mill at Colorado Springs, raised the price paid for gold from $32.76 per ounce to $33.50. The Denver Mint paid $35.00 per ounce. As has been the case for a number of years, the Cripple Creek district was the banner gold producer of the state. Park county was second in the production of this metal and Clear Creek county third. Boulder county also made a good output and considerable gold was produced in Eagle county. San Juan, San Miguel, Lake and Gilpin counties contributed a fair share to the gold output. The rest of it came in small amounts from a number of other counties. A good deal of the gold from Park, Clear Creek, Gilpin and Lake counties came from placer mines.

Silver

The silver output showed quite a little decrease from the previous year, due principally to the fact that beginning with June production of the copper-silver-gold ore from the Empire Zinc property at Gilman, Eagle county, was gradually cut down as the company returned to the mining of its large bodies of zinc ore. The silver output for the state amounted to 7,301,697 ounces, valued at $5,192,316. Eagle county still retained its position of several years past as being the banner silver producer of the state. Mineral county was second and San Juan third, with San Miguel being a close fourth.

Lead

Lead showed an increase in production of about 10% in weight over that of the previous year. This was due to the strong demand for this mineral for war purposes. The lead production for Colorado in 1941 was 25,148,000 pounds, with a total value of $1,433,436. The production for 1940 was 22,952,000 pounds of the value of $1,147,600. San Juan county was the largest lead producer; Dolores second and Eagle third.

Copper

The copper production of the state fell off to a considerable extent, being not much more than 50% in weight of that produced in 1940. This was due to a great extent to the Empire Zinc Company at Gilman producing less copper during the latter part of the year, owing to the resumption of mining the large bodies of zinc ore. The total copper produced in the state during 1941 amounted to 13,696,000 pounds valued at $1,592,528, while the production for 1940 was 24,304,000 pounds valued at $2,746,352.

Zinc

Zinc made a strong increase in production during the past year, due chiefly to the resumption of mining this class of ore by the Empire Zinc branch of the New Jersey Zinc Company at Gilman. Eagle county was the banner zinc producer in 1941, Dolores was second and San Juan third. The total production for 1941 amounted to 31,440,000 pounds of the value of $2,358,300, as against 10,120,000 pounds of the value of $637,560 for 1940.

The total output for 1941 of the five metals was $23,877,597 compared to $24,293,665 for 1940. Eagle county was first, Teller second and Park third.

War Defense Minerals

Molybdenum, vanadium and tungsten are the principal ores known as war or defense minerals. These are used a great deal in the preparation of steel and steel products for war purposes.

The year 1941 showed a very considerable increase in the production of these minerals, especially molybdenum and vanadium.

Molybdenum

All of the molybdenum production in Colorado was made by the Climax Molybdenum Company, operating in the northeastern corner of Lake county, near the lines of Summit and Eagle counties. This mine is the greatest producer of molybdenum in the world and during the past year produced about 70% of the entire world output. At the end of the year the mine was taking out about 15,500 tons of ore per day and at that rate would produce about 32,000,000 pounds of molybdenum per year. This is a little greater tonnage than the average for the year, so the entire production amounted to 27,000,000 pounds. One or two other small deposits have been reported around the state but no molybdenum ore produced.

Vanadium

The amount of vanadium produced showed a considerable increase over that of 1940. The principal producers of the state were the United States Vanadium Corporation and the Vanadium Corporation of America. The production of the United States Vanadium Corporation was 2,216,000 pounds of concentrates. The Vanadium Corporation of America also produced a good deal in 1941. The North Continent Company produced some concentrates. Other small mills worked during the year, such as the Loma near Grand Junction, the Gateway Alloys at Gateway, and one or two smaller ones that made some production. Some ore from the state was sent to mills in Utah and some Utah ore was treated in Colorado mills. The main production of vanadium during 1941 came from Montrose and San Miguel counties, with some from Mesa and Garfield.

Tungsten

The tungsten output for the year 1941 was somewhat larger than that for 1940. The price of the mineral had been advancing for a number of months and at the end of the year was higher than for some time. Boulder county was the main producer of tungsten in Colorado, although several other small deposits are being developed.

Nonmetallics

Nonmetallics are becoming a very important mining product in Colorado and showed a fair increase in production during 1941. It is expected there will be a further increase during 1942. The counties that produce most of these materials on the eastern slope are situated chiefly along the front range, though some of the products are found further back in the hills. Some of the western slope counties are also producing these materials. The main eastern slope counties are Chaffee, Custer, Fremont, Pueblo, El Paso, Douglas, Jefferson, Boulder and Larimer. Some production is also coming from Park, Teller and Jackson counties. Gunnison is perhaps the most important of the western slope counties.

Among the nonmetallics produced are limestone and dolomite for fluxes; fire clay for fire brick, assay supplies, etc.; plastic clay for common brick, sewer pipe and other articles of like nature; feldspar for glass making and other purposes; mica, both sheet and scrap; building stone, such as granite, marble and other kinds; fluorspar, used principally for fluxes; silica sand, barite, vermiculite, gypsum, alabaster, beryl and a number of others.

The feldspar production of the state was better than in 1940, due chiefly to the fact that the material known as syenite, from Canada, has not proven as satisfactory as at first thought. The price paid for feldspar was quite low. Gunnison county produces a good deal of vermiculite and also has the best marble quarry in the state. Plastic clay for common brick is found in most of the counties.

A large amount of tunnel work was done during the year which was not used entirely for mining purposes, but was under the supervision of the State Bureau of Mines. The principal work was done in the Carlton tunnel which, of course, was run exclusively for drainage of mines. In addition to this several short tunnels were run in Clear Creek canon on highway work. A large amount of work has been done on both the east and west portals of the Big Thompson tunnel. This is being built by the U. S. Bureau of Reclamation for the purpose of carrying water from the western slope to the eastern slope for irrigation. The west portal is at Grand Lake and the east portal near Estes Park. This tunnel is a government project and when completed will be a little over thirteen miles in length.

The number of men employed in mining and allied industries in the state during 1941 averaged about 10,005. This number included those working underground and on the surface around the mines, as well as in mills, smelters and reduction works employed in the recovery of metals, both defense and non-defense. Men working in the several tunnels being run for irrigation and other purposes are also included in this number. A good many men were employed in quarries from which the nonmetallics were taken. There are about twenty-five counties in the state that may be classed as mining counties. Several others not in this group made good production in the nonmetallic line.

Following is a list, published by the United States Bureau of Mines, showing the production of gold, silver, lead, copper and zinc in thirty-six counties of the state:

MINE PRODUCTION BY COUNTIES

Mine production of gold and silver in Colorado during the year 1941

	GOLD		SILVER	
	Fine Ounces	Value	Fine Ounces	Value
Adams	282	$ 9,870	45	$ 32
Arapahoe	22	770	4	3
Archuleta	38	1,330	4	3
Boulder	30,729	1,075,515	62,775	44,640
Chaffee	498	17,430	1,734	1,233
Clear Creek	33,198	1,161,930	129,416	92,029
Conejos	7	245	204	145
Costilla	7	245	1	1
Custer	....	......	2,222	1,580
Denver	6	210	....	......
Dolores	1,068	37,380	150,477	107,006
Douglas	13	455	....	......
Eagle	25,168	880,880	4,352,677	3,095,237
Fremont	1	35	35	25
Garfield	89	3,115	142	101
Gilpin	13,560	474,600	17,966	12,776
Grand	1	35	744	529
Gunnison	1,871	65,485	13,815	9,824
Hinsdale	20	700	6,186	4,399
Jefferson	579	20,265	2,039	1,450
Lake	20,287	710,045	120,603	85,762
La Plata	747	26,145	1,914	1,361
Larimer	31	1,085	21	15
Mineral	904	31,640	906,712	644,773
Montezuma	1,112	38,920	1,229	874
Montrose	56	1,960	13,735	9,767
Ouray	10,790	377,650	159,186	113,199
Park	45,682	1,598,870	31,230	22,208
Pitkin	....	......	238,773	169,794
Rio Grande	16,979	594,265	14,019	9,969
Routt	5	175	3	2
Saguache	24	840	17,706	12,591
San Juan	17,384	608,440	532,731	378,831
San Miguel	24,097	843,395	450,515	320,366
Summit	1,304	45,640	51,234	36,433
Teller	133,470	4,671,450	21,600	15,360
Total, 1941	380,029	$13,301,015	7,301,697	$ 5,192,318
Total, 1940	367,336	12,856,760	9,710,709	6,905,393

MINE PRODUCTION BY COUNTIES

Mine production of copper, lead, and zinc in Colorado during the year 1941

	COPPER		LEAD		ZINC		Total Value Five Metals
	Pounds	Value	Pounds	Value	Pounds	Value	
Adams	....	....	....	....	....	....	$ 9,902
Arapahoe	....	....	....	....	....	....	773
Archuleta	....	....	....	....	....	....	1,333
Boulder	103,000	$ 12,154	225,000	$ 12,825	11,000	$ 825	1,145,959
Chaffee	3,000	354	28,000	1,596	48,000	3,600	24,213
Clear Creek	161,000	21,358	947,000	53,979	112,000	8,400	1,337,696
Conejos	....	....	....	....	....	....	390
Costilla	....	....	4,000	228	8,000	600	1,074
Custer	2,000	236	66,000	3,762	....	....	5,578
Denver	....	....	....	....	....	....	210
Dolores	124,000	14,632	5,054,000	288,078	6,008,000	450,600	897,696
Douglas	....	....	....	....	....	....	455
Eagle	11,218,000	1,323,724	3,420,000	194,940	21,760,000	1,632,000	7,126,781
Fremont	8,000	944	2,000	114	....	....	1,118
Garfield	500	59	....	....	7,000	525	3,800
Gilpin	138,000	16,284	39,000	2,223	....	....	505,883
Grand	....	....	2,000	114	....	....	678
Gunnison	3,000	354	120,000	6,840	64,000	4,800	87,303
Hinsdale	15,000	1,770	15,000	855	....	....	7,724
Jefferson	192,000	22,656	....	....	....	....	44,371
Lake	102,000	12,036	2,230,000	127,110	95,000	7,125	942,078
La Plata	....	....	....	....	....	....	27,506
Larimer	....	....	....	....	....	....	1,100
Mineral	32,000	3,776	1,140,000	64,980	....	....	745,169
Montezuma	....	....	....	....	....	....	39,794
Montrose	47,000	5,546	....	....	....	....	17,273
Ouray	256,000	30,208	637,000	36,309	38,000	2,850	560,216
Park	79,000	9,322	738,000	42,066	614,000	46,050	1,718,516
Pitkin	2,000	236	807,000	45,999	254,000	19,050	235,079
Rio Grande	8,000	944	....	....	....	....	605,178
Routt	....	....	....	....	....	....	177
Saguache	26,000	3,068	320,000	18,240	62,000	4,650	39,389
San Juan	870,000	102,660	6,145,000	350,265	1,680,000	126,000	1,566,196
San Miguel	78,500	9,263	2,834,000	161,538	....	....	1,334,562
Summit	8,000	944	375,000	21,375	683,000	51,225	155,617
Teller	....	....	....	....	....	....	4,686,810
Total, 1941	13,496,000	$1,592,528	25,148,000	$1,433,436	31,444,000	$2,358,300	$23,877,597
Total, 1940	24,304,000	2,746,352	22,952,000	1,147,600	10,120,000	637,560	24,293,665

A short account of the operations in each county during 1941 is given here:

Adams—A small amount of gold and silver was taken from several small placers along the Clear Creek and Platte valleys.

Arapahoe—A very small amount of placer gold was produced.

Archuleta—A small amount of gold and silver was taken from a lode mine.

Boulder—This county did a large amount of development work on its gold, silver and allied minerals and made a heavy production. The gold values for the year amounted to $1,075,515 and ran Clear Creek county very close for third place in gold production. The Slide mine was the largest of this class worked and made a good output. A mill of 100 tons daily capacity was operated in connection with this mine, which is equipped with concentration and flotation. About 100 men were employed on mine and mill. A number of other fair sized mines worked during 1941, as well as some smaller ones. Some of the ore was sent to the Golden Cycle mill at Colorado Springs but most of the mines with mills of their own sent the concentrates to Leadville. This county is the leading producer of tungsten and made a fair output. The price has advanced during the past year and as tungsten is an important defense mineral, an increased interest has been taken in it. The larger mills have been revamped and a few smaller ones put up. The principal companies handling this ore are the Wolf Tongue Mining Company and the Vanadium Corporation of America. Some copper, lead and zinc were also produced.

Chaffee—This county produced a small amount of gold and silver, as well as a little lead, copper and zinc. The county made its greatest production in the nonmetallic line and will be treated under that head.

Clear Creek—This county was third in the production of gold during 1941. The output was 33,198 ounces of the value of $1,161,930. Nearly $100,000 worth of silver was mined. In addition to the precious metals the county produced a good amount of lead, copper and zinc. The Minnesota mine near Empire was the largest single operation and the heaviest producer. This company has its own mill, which treats the ore by flotation, tables and cyanide. About 120 men were employed at the mine and mill the past year. A number of other lode mines were worked and considerable placer mining was done. Some effort was made to open up properties known to contain zinc but not much headway was made.

Conejos—A few ounces of gold and silver were produced.

Costilla—This county produced a few ounces of gold and silver, as well as a little lead and zinc.

Custer—A little mining work was done in 1941 and some lead sent out; also a little copper and a few ounces of silver. An attempt was made to reconcentrate the lead dump of the Terrible mine at Ilse. Some work was done near the Bull Domingo property but no ore was shipped. Quite a little work was done on a barite property near Ilse.

Denver—A few ounces of gold were taken from placers on the Platte river.

Dolores—The usual production of zinc was maintained but the county dropped from first to second place in 1941. This was due to Eagle county resuming its production of zinc. Dolores also took second place in lead output. The Rico Argentine mine at Rico was the main one and operated continuously. Some work was done at Dunton early in the year and one or two smaller properties also operated. The sinking of a new shaft close to the town of Rico was commenced and considerable development was done through the St. Louis shaft near the Blaine tunnel.

Eagle—In June of 1941 the Empire Zinc Company at Gilman began rehabilitating its famous underground mill to handle zinc ore and the mining of this was resumed. On account of the low price no zinc had been produced for about ten years and the company had turned its attention to mining the large bodies of copper, silver and gold ore which occur on the lower levels of the mine. It took some time to get the mill in good operating condition but by the end of the year it was at its former capacity, thus placing Eagle as the largest zinc producing county in the state. The mining of zinc caused a reduction in the output of the copper product but Eagle county still retained its place as the banner copper and silver county of the state for 1941. At the close of the year about 20,000 tons per month of crude zinc ore were being mined and about 6,000 tons of copper-silver ore. All of the zinc ore was put through the mill, which employs flotation, and the product was zinc sulphide concentrates. The copper-silver ore was sent direct to Midvale, Utah, for treatment. About 550 men were employed at the mine and mill. Several other small mines operated in Eagle county during the year, the main one being the Ben Butler in Belden canon.

Fremont—This county produced a small amount of lead and copper. The main item of metal mining interest was the resumption of work by the zinc mill at Canon City where the zinc sulphide concentrates from the underground mill of the Empire Zinc Company at Gilman were roasted and zinc oxide was produced. These concentrates were then shipped to various parts of the country. About 50 men were employed in this mill, which had not been operated for about ten years. Fremont county is noted for its production of several nonmetallics and will be taken up under that head.

Garfield—This county produced a little lead and zinc and a few ounces of gold and silver. In the early part of 1941 quite a little vanadium ore was taken from the property of the U. S. Vanadium Corporation about fifteen miles northeast of Rifle and trucked to Uravan in Montrose county and there milled. About the middle of the year the work of erecting a new mill on the foundations of the old one was commenced and the sending of ore to Uravan ceased. Quite a little new mining work was initiated and the ore extracted was stock piled awaiting the new mill. This mill will probably be ready to operate early in 1942 and it is understood will be a little larger than the one formerly there.

Gilpin—The principal output of this county for the year was gold, a considerable amount of which came from placers. A little copper and lead ore was produced, as well as some tungsten. The Chain O' Mines property worked part of the time. The main placers were located on the north fork of Clear Creek.

Grand—A few ounces of silver and one ounce of gold was produced in this county in 1941; also a few pounds of lead. Some development work was done in lode mining. The west portal of the Big Thompson Reclamation tunnel is situated at Grand Lake in this county and work was in progress most of the year.

Gunnison—Some mining was done in this county all year but no heavy production was made. The chief property in the county was the Carter tunnel near Ohio City and both mine and mill worked steadily, making a fair production. The Burleson mine in the same neighborhood worked a part of the time and did some producing. A little work and some prospecting was done in other parts of the county but not much ore was taken out. Some nonmetallics were also produced. The county produced a little lead, zinc and copper but its main values were in gold, with some silver.

Hinsdale—A little production of copper and lead, with some silver and a few ounces of gold, was made. Some prospecting and development work was done and the resumption of work on other properties is in prospect for 1942.

Jefferson—This county is credited with a 1941 production of some gold and silver, taken mostly from small placers. In addition to this, a little copper was taken out. The county has for many years been a good producer of nonmetallics, especially fire and plastic clays and some materials used in the manufacture of pottery.

Lake—The mining in this county may be divided into two sections—that of general mining, including the operations incident to the production of gold, silver, copper, lead and zinc, and that of the defense mineral known as molybdenum. In the former class a good amount of development work was done and some ore was shipped. The production was mainly by smaller operators and leasers. The Resurrection Mining Company did a lot of prospecting and development work on the Resurrection mine and other properties, and later took over the Yak tunnel and others. During the latter part of the year a large amount of rehabilitation work, including timbering the Yak tunnel, was done. A mill was erected at the mouth of the tunnel which has an up-to-date selective flotation process and will produce lead and zinc concentrates. The large amount of reconstruction work prevented much production being made. About 180 men were employed at the close of the year on mines and mill. The California Gulch mill which was recently erected by L. S. Harner, formerly of the Golden Cycle mill at Colorado Springs, began operations on dumps in the district and was doing good work at the end of the year. Several smaller mills also operated. The Arkansas Valley smelter, which is the main plant of the American Smelting and Refining Company now operating in Colorado, ran all year, employing about 275 men.

In the defense mineral area, the Climax Molybdenum Company, operating in the northeastern part of the county, made a wonderful showing in the production of molybdenum, which is used in the manufacture of various kinds of steel and for other purposes. This company is the largest producer of this material in the world and produced about 70 per cent of the world output in 1941. In December of last year the mine was extracting about 15,500 tons of ore per day. This is sent through the concentrating mill on the property. The ore from the mine averages .57 of one per cent of molybdenite, which is the sulphide of molybdenum (MoS_2). All mining is done by the latest improved methods. The ventilating system is one of the best and every effort is made to do the work in the safest possible manner. A safety engineer has supervision of all the work and every effort is made to avoid accidents. The company has its own hospital and a resident physician is on the ground at all times. The safety record of the property during the past few years has been very good indeed. About 1,100 men were employed at the close of last year. Some of these lived at Climax, some at Leadville and some at other places.

La Plata—This county had some small operations and produced a little gold and silver. Some prospecting and development work was also done.

Larimer—Some prospecting was done in this county and a few ounces of gold and silver produced. The nonmetallic output was good. The east portal of the Big Thompson Reclamation tunnel is located in this county and work was pushed all the year, with good progress made.

Mineral—Considerable development work was done and a fair production was made from the Creede district, mostly lead and silver. Some copper and a little gold was also produced. The mill which was erected a few years ago did good work in 1941.

Montezuma—The main mining done in this county during the year was in the Red Arrow on the East Mancos river, near the east side of the county. The amount of production was not large but values were quite good. The product was gold and a little silver.

Montrose—A small amount of copper and some silver was produced in this county during 1941. There were several placers along the rivers but, on the whole, they produced very little. This county made a heavy production of vanadium ore and showed quite an increase over the previous year. The principal operators during the year were the United States Vanadium Corporation and the Vanadium Corporation of America. The former worked steadily all year and produced a large amount of ore, which was treated at the company's mill at Uravan. This mill is located on the San Miguel river in the northwestern part of the county and about six miles up the river from where the San Miguel and Dolores rivers come together. The ore was obtained principally from a number of small mines in the neighborhood of Uravan on both sides of the San Miguel river. Some of the ore came from San Miguel and Mesa counties and a little was trucked in from Garfield, near Rifle. The ore is hauled to the mill by trucks, crushed, roasted and leached. The principal product is concentrates, chiefly valuable for the vanadium content. Most of the ore was produced on company account though some was taken out by lessees and some bought from other mines. The concentrates from the mill were hauled to Grand Junction and then shipped east, where they were sold on the basis of the vanadium oxide they contained. Some remodeling of the mill was done in the latter part of the year for greater efficiency and the saving of other minerals in the ore. The company has a coal bed of its own and also controls some salt beds.

The Vanadium Corporation of America, with headquarters at Naturita, produced quite a little vanadium. The company's mill is on the San Miguel river, about three miles below Naturita, and an addition to the mill was started during the later months of the year. The ore treated at the mill was from both Montrose and San Miguel counties.

Ouray—The 1941 production from this county consisted of gold, silver, lead, copper and zinc. The gold values were greater than all of the other minerals combined. The principal mine was the Camp Bird, operated by the King Lease. A good production was made and considerable development work done. The ore was put through the mill at the mouth of the main tunnel. This mill was moved from the upper workings about the middle of the year. About 60 men were employed on the mine and mill during 1941. Some smaller mines were operated part of the time. No work was done on the Treasury tunnel.

Park—This county made a fair showing in lode mining and a very good one in the placer field. The main operations in lode mining were in the territory along the London fault, and the principal mines were the London, London Butte and American. Some work was done on the Barcoe property, which also penetrates the fault, though some distance to the south, and several smaller mines also worked part of the time. The main production from Park county in 1941 was gold with some silver. A good production of lead with some copper and zinc was also made.

The placer work consisted of dredging and sluicing. About the middle of the year installation of a large placer dredge on the flat below Fairplay was completed and the handling of gravel begun. This dredge was put in by the South Platte Dredging Company of San Francisco and has a capacity of about 700 yards of gravel per hour. The company controls a large acreage which has been carefully tested and the project has a long life before it. The work of handling gravel was commenced on June 11, 1941, and from that time to November 5, 2,086,620 cubic yards of gravel were moved. Twenty-seven men were employed on this operation, including the manager, bookkeeper and engineer. Two smaller dredges were also operated during the year, one of which is located on Beaver Creek, close to the town of Fairplay, and has been working for several years. During the summer of 1941 a dragline dredge was put in on the site of the historic town of Hamilton near Como, on Tarryall creek, and considerable gravel was moved. The work of installing a dredge between Alma and Fairplay on a part of the Snowstorm placer was started during the year. In addition to the dredging, considerable sluicing was done in the Platte valley between Alma and Fairplay, and on other streams. In most of the sluicing work the gravel is loaded on trucks with a power shovel and hauled to where water is available and there sluiced. "In the good old days we took the water to the placer—now we take the placer to the water." It was the good work done in taking the gold from these placers that enabled Park county to take second place in gold production during 1941.

Pitkin—This county did considerable work and a fair amount of ore was shipped from the Aspen district. This was mostly silver and lead, with some zinc and a little copper. The Midnight mine was the heaviest producer, though several other mines had some output. Quite a tonnage of lime ore was sent to the smelter at Leadville to be used as a flux.

Rio Grande—This county held its own in mining during 1941, due to the fact that good work was done and a fair production made from the Summitville property in the southwest corner of the county. The main ore was gold, with some silver and a small amount of copper. About 125 men were employed at the mine and mill.

Routt—A few ounces of gold and silver from one or two placer beds were produced.

Saguache—A few ounces of gold with some silver and a little lead, zinc and copper were produced. Some diamond drilling was done by government agencies looking for the extension of some manganese bodies outcropping on the surface.

San Juan—This county led the state in lead production during 1941. Dolores was second and Eagle third. The output for the year was 6,145,000 pounds of lead. The county was second in the production of copper and third in the production of zinc. A good output of gold and silver was also made. The main operations were on the Shenandoah-Dives mine and mill, the latter being about two miles northeast of Silverton, and these were the main support of the Silverton district. The mining operations were carried on through the Mayflower tunnel and a good production was made. The mill did good work and treated some custom ore in addition to its own. Some work was done by the American Smelting and Refining Company in connection with its Silver Lake property, through the Mayflower tunnel of the Shenandoah company. About 300 men were employed on the Shenandoah-Dives property, both in the mine and mill. Several other properties did good work in this county; the chief ones were the Pride of the West and the Highland Mary mines in Cunningham Gulch. Both of these properties made some production and did good work in their mills. Toward the end of the year the Highland Mary closed down for the winter, owing to lack of power to operate. Some work was done on the Sunnyside and on the Treasure Mountain Gold Mining Company's properties. Several other mines also did some work.

San Miguel—There are two mining districts in this county—the Telluride and the Ophir, the former being the largest. The principal mine in the Telluride district is the Veta Mines, Incorporated, a California company which about three years ago took over the Smuggler Union, Cimarron, part of the Tomboy and some others. About 500 tons of crude ore per day were being mined and put through the mill in the latter part of the year. This is a flotation mill and handles all of the mine production. About 40 tons per day of concentrates were produced. The principal values of these concentrates were gold, silver and lead, with some copper, and were sent to the Leadville smelter. Toward the end of the year work was begun putting in new machinery for the saving of the zinc in the ore. About 250 men were employed on the mine and mill. One of the encouraging developments was in the lower workings where good ore was found in the conglomerates and other sedimentary formations below the main eruptive flow. Work done from the Pennsylvania tunnel cutting the Tomboy vein at depth developed good ore. Several smaller properties in the district were worked part of the time.

In the Ophir district the Alta mine worked steadily all year and made a fair production. The ore was gold, silver and lead with some copper. About 125 men were employed. The Butterfly mine, also in this district, worked part of the year but closed when the mill was destroyed by fire. One or two smaller mines also operated.

Summit—Considerable placer work was done in this county during 1941 and some gold and silver produced. Some new operations were commenced in the Montezuma district. Some zinc and a little lead and copper were also produced. A large amount of work was done on the Green Mountain dam, which is a reclamation project on the Blue river, close to the north line of the county.

Teller—The gold output from the Cripple Creek district for 1941 was a little higher than that of 1940. This was due to a great extent to the draining of some of the lower workings of the mines by the Carlton drainage tunnel. Last year this district produced gold valued at $4,868,108. Of this $4,658,108 was handled at the Golden Cycle mill and the balance at the Cameron and Kavanaugh mills.

The principal properties in the Cripple Creek district during the past year, as has been the case for some time, were those controlled by the Carlton interests. The Carlton controlled companies operating in the district in 1941 were the Golden Cycle Corporation, The Cresson Consolidated Gold Mining and Milling Company, the United Gold Mines Company, The Elkton Company, The Doctor-Jack Pot Mining Company, the New Gold Dollar Company, The Empire Lee Mining Company, the Leclair Consolidated Mines Company and the Jerry Johnson Gold Mines Company. The United Gold Mines Company was the heaviest producer in the district, especially so far as tonnage is concerned, with the Cresson a close second. The latter company was operated both on company account and by split check lessees. A little company work was done on the United Gold Mines Company's property but the greater part was done by lessees, mostly split check. This company also sent out several thousand tons of crushed rock from its dumps, which was used in making concrete, principally for road work.

The draining of the lower levels of the Ajax property by cutting the New Market fault in the Carlton tunnel was very important and enabled work on these levels to be resumed. This was done in March of the past year and at the beginning of 1942 Ajax was taking considerable ore from these levels and sinking to deeper ones.

A very important piece of work was completion of the sinking of the Morning Glory shaft from the 800 to the 1,400 foot level. The greater part of this was done in 1940, but the sinking of the last 200 feet and considerable drifting were done in the past year. The operations were conducted by a well organized leasing company.

The properties of the Stratton Cripple Creek Mining and Development Company were worked all year, mostly by leasers, although some company work was done. A fair production was made and considerable development work accomplished. The El Paso property was taken over by Chicago people under lease and option from the Gold Producers, Inc., in the early part of the year. A lot of development was done and some ore shipped. Some work was done by the Rose Bud Mill, Inc., on the installation of a 200-ton selective flotation mill on the Mary Nevin property. The Golden Conqueror Mines, Inc., worked all the year on its leases on portions of the Acacia, Free Coinage and United Gold Mining Company's ground and shipped considerable ore. The Cameron Mines, Inc., worked all year on ore mostly from its own property.

Nonmetallics

During the past two years the State Bureau of Mines has made an effort to encourage the production of nonmetallics and has met with some success. In accordance with this policy at the annual meeting of the Colorado Mining Association in January of 1941 an effort was made to get an exhibit of some of these together so that those attending the meeting might get better ideas as to what the state was doing in this line. Some little success was had and it is hoped that the plan can be continued. A list of the principal "nonmetallic counties" with a few words as to the work done in 1941 is given here.

Boulder—Some red-colored sandstone was produced during 1941 and was used for building purposes and some classes of concrete.

Chaffee—The production of limestone for fluxing purposes was the largest in the state. The heaviest production came from the large quarry at Monarch near the foot of Monarch pass. A large amount of dolomite was also produced. Both of these products were used as fluxing material and were sent to the C. F. & I. plant at Pueblo. Considerable work was done in the fluorspar deposits of this county, the principal place being about ten miles north of Salida in the neighborhood of Browns canon. A fair production was made. A little building stone was taken out. Some feldspar and a little other nonmetallic material was also mined.

Douglas—A good production of feldspar was made during the summer months and, though there were some small producers, most of it came from the quarry belonging to the M. & S., Inc., which operates a grinding plant in Denver. Quite a little fire clay was shipped to Denver from quarries near Castle Rock. Other nonmetallic material was also produced.

El Paso—Two limestone quarries operated in this county during 1941. This limestone was used by the Holly Sugar Company in its sugar factories. A quarry producing greenstone, situated near Manitou, was in operation all year. Most of the product was shipped out of the state.

Fremont—A large amount of nonmetallic products were mined in this county. The dolomite quarry about three miles west of Canon City worked steadily all year and made a good production. This was used as a flux by the Colorado Fuel and Iron Company in the steel plant in Pueblo. A large amount of fire clay was produced and used in the manufacture of fire brick and other like articles. The Diamond Fire Brick Company of Canon City did most of this manufacturing. Another quarry near Canon City furnished considerable sandstone used for ganister. A quarry near the Chaffee county line produced limestone which was used by the smelter in Leadville for fluxing purposes. Fremont county produced the largest amount of feldspar in the state. This was handled by the Colorado Feldspar Company, which operates a grinding plant in Canon City, and the M. & S., Inc., which has a plant in Denver. These plants worked all the year. The feldspar was taken from a number of quarries in Fremont and other counties. Some mica and a little beryl were also produced. A travertine quarry near Canon City worked all year. Some terrazzo was manufactured.

The Portland cement plant at Portland worked all year and made a good production. A fair amount of gypsum was taken out.

Huerfano—Some fire and plastic clay was shipped in 1941.

Jefferson—A large amount of fire clay was produced in 1941. These quarries were located along the foothills in the sedimentary deposits. Several fire clay quarries were worked during the year and a good amount of plastic clay was also mined. Some of this clay was made into brick and other articles at the quarries and some was sent to Denver. Considerable feldspar was also produced.

Larimer—A large amount of limestone was shipped from this county during 1941. This was taken from three large quarries, one of which belonged to the Ideal Cement Company. Clay was also produced in large quantities, both plastic and fire clay. Considerable gypsum was produced and some alabaster.

Pueblo—A good deal of fire clay was produced from this county, as well as plastic clay used in the manufacture of brick and tile. The fire clay quarries are located at Stone City and other places.

Las Animas—The clay output from this county was mostly plastic and was used for making brick and tile.

Gunnison—This was the main producer of the nonmetallic products on the western slope. Several bodies of vermiculite were worked in a small way during 1941. The main nonmetallic substance in this county was marble owned by the Yule Marble Company. In the past this company produced a large amount of this marble, which was of a splendid variety. Only a small amount has been produced in recent years. The quarry was worked most of the year. Toward the end of 1941 it was sold to a large eastern firm which closed it down to eliminate competition.

Several other counties produced small quantities of nonmetallics and may be heard from later.

HISTORICAL NOTE

The Bureau of Mines of the State of Colorado was established by an act of the Tenth General Assembly, approved March 30, 1895. This act repealed a previous act creating an "Inspector of Metalliferous Mines," which was passed in 1889. The Bureau of Mines law established the office of Commissioner of Mines, provided for in the State Constitution, and charged him, among other things, with the supervision of metal mine inspection and the enforcement of laws relating to safety and health in metal mines. Subsequently this was broadened to include "any ore mill, sampling works, smelter, metallurgical plant, rock quarry, clay pit, railroad tunnel, rock excavation or mine of whatsoever kind or character except coal mines." The Commissioner of Mines was also charged "as he has opportunity and means" to collect mineral specimens and exhibit the same, to collect books relating to mining and geology, to collect and preserve data regarding mining methods, mining costs, milling, metallurgy, geology, mineral deposits of all kinds, and so on. Aside from the purchase of the Elsner collection of minerals, very little "opportunity and means" has been granted to the Commissioners for anything except inspection work. A strong effort is being made at this time not only to make mining as near absolutely safe as possible but to help and encourage it in every legitimate way. The present activities of the Bureau of Mines are treated elsewhere in this report.

COMMISSIONERS OF MINES

Harry A. Lee	May 11, 1895-May 10, 1903
E. L. White	May 10, 1903-May 10, 1907
T. J. Dalzell	May 10, 1907-May 10, 1911
T. R. Henahen	May 10, 1911-May 10, 1915
Fred Carroll	May 10, 1915-June 1, 1919
Horace F. Lunt	June 1, 1919-June 1, 1923
John T. Joyce	June 1, 1923-June 1, 1927
John T. Joyce	June 1, 1927-June 1, 1931
John T. Joyce	June 1, 1931-June 1, 1935
John T. Joyce	June 1, 1935-June 12, 1939
Edward P. Arthur	June 12, 1939-

PUBLICATIONS OF THE BUREAU OF MINES

BULLETINS

Bulletin No. 1, Recommendations for Safety Appliance in Mining, Harry A. Lee, Commissioner of Mines, 1896.

Bulletin No. 2, Precious Metal Production for the Year 1898, Harry A. Lee, Commissioner of Mines, 1899.

Bulletin No. 3, Mining Laws, Relative to Bureau of Mines Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1899.

Bulletin No. 4, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1901.

Bulletin No. 5, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1902.

Bulletin No. 6, Regulations Relative to the Construction, Equipment and Operation of Metalliferous Mines, Mills and Metallurgical Plants, Recommendations and Mineral Production for 1905, E. L. White, Commissioner of Mines, 1906.

Bulletin No. 7, Federal and State Laws Relating to Mining, Fred Carroll, Commissioner of Mines, 1916.

Supplement to Bulletin No. 7, Mining Laws Enacted by the Twenty-first General Assembly, Fred Carroll, Commissioner of Mines, 1917.

Supplement No. 2 to Bulletin No. 7, Amendments to the Mining Laws Enacted by the Twenty-second General Assembly, Horace F. Lunt, Commissioner of Mines, 1919.

Supplement No. 3 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-third General Assembly, Horace F. Lunt, Commissioner of Mines, 1921.

Supplement No. 4 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-fourth General Assembly, Horace F. Lunt, Commissioner of Mines, 1923.

Bulletin No. 8, The Oil Shales of Northwestern Colorado, Horace F. Lunt, Commissioner of Mines, 1919.

Bulletin No. 9, Mine Safety Standards, Horace F. Lunt, Commissioner of Mines, 1920. Out of print, now embraced in Bulletin No. 11.

Bulletin No. 11, Federal and State Laws Relating to Mining, John T. Joyce, Commissioner of Mines, 1931.

REPORTS

Report of Bureau of Mines, Colorado, from its establishment in May, 1895, to November 30, 1896, Harry A. Lee, Commissioner of Mines, 1896.

Report for the Year 1897, Harry A. Lee, Commissioner of Mines, 1898.

Report for the Year 1898, Harry A. Lee, Commissioner of Mines, 1899.

Biennial Report for the Years 1899-1900, Harry A. Lee, Commissioner of Mines, 1900.

Biennial Report for the Years 1901-1902, Harry A. Lee, Commissioner of Mines, 1903.

Biennial Report for the Years 1903-1904, E. L. White, Commissioner of Mines, 1905.

Biennial Report for the Years 1905-1906, E. L. White, Commissioner of Mines, 1907.

Biennial Report for the Years 1907-1908, T. J. Dalzell, Commissioner of Mines, 1909.

Biennial Report for the Years 1909-1910, T. J. Dalzell, Commissioner of Mines, 1911.

Biennial Report for the Years 1911-1912, T. R. Henahen, Commissioner of Mines, 1913.

Biennial Report for the Years 1913-1914, T. R. Henahen, Commissioner of Mines, 1914.

Biennial Report for the Years 1915-1916, Fred Carroll, Commissioner of Mines, 1916.

Biennial Report for the Years 1917-1918, Fred Carroll, Commissioner of Mines, 1919.

Annual Report for the Year 1919, Horace F. Lunt, Commissioner of Mines, 1920.

Annual Report for the Year 1920, Horace F. Lunt, Commissioner of Mines, 1921.

Annual Report for the Year 1921, Horace F. Lunt, Commissioner of Mines, 1922.

Annual Report for the Year 1922, Horace F. Lunt, Commissioner of Mines, 1923.

Annual Report for the Year 1923, John T. Joyce, Commissioner of Mines, 1924.

Annnal Report for the Year 1924, John T. Joyce, Commissioner of Mines, 1925.

Annual Report for the Year 1925 was fully prepared but because of lack of funds was not printed. The manuscript is on file in the office of the State Bureau of Mines.

Annual Report for the Year 1926, John T. Joyce, Commissioner of Mines, 1927.

Annual Report for the Year 1927, John T. Joyce, Commissioner of Mines, 1928.

Annual Report for the Year 1928, John T. Joyce, Commissioner of Mines, 1929.

Annual Report for the Year 1929, John T. Joyce, Commissioner of Mines, 1930.

Annual Report for the Year 1930, John T. Joyce, Commissioner of Mines, 1931.

Annual Report for the Year 1931, John T. Joyce, Commissioner of Mines, 1932.

Annual Report for the Year 1932, John T. Joyce, Commissioner of Mines, 1933.

Annual Report for the Year 1933, John T. Joyce, Commissioner of Mines, 1934.

Annual Report for the Year 1934, John T. Joyce, Commissioner of Mines, 1935.

Annual Report for the Year 1935, John T. Joyce, Commissioner of Mines, 1936.

Owing to lack of funds the 1936 Annual Report of the State Bureau of Mines was not published.

Annual Report for the Year 1937. John T. Joyce, Commissioner of Mines, 1938.

Owing to lack of funds the 1938 Annual Report of the State Bureau of Mines was not published.

Annual Report for the Year 1939, Edward P. Arthur, Commissioner, 1940.

Owing to lack of funds the 1940 Annual Report of the State Bureau of Mines was not published.

At the time this report goes to press, there are available for distribution copies of the Annual Reports for 1921, 1922, 1926, 1928, 1932 and 1939. The 1929, 1930, 1931, 1933, 1934, 1935 and 1937 Annual Reports are out of print. The publications not mentioned in this paragraph are exhausted, but copies may be consulted in many of the public, state and college libraries throughout the country.

Note—The Colorado Geological Survey has published a number of geological reports and maps, a list of which may be obtained from the head of the Geology Department of the University of Colorado, Boulder, Colorado.

MINE ACCIDENTS IN COLORADO

By Edward P. Arthur

Commissioner of Mines

The operators, employees and especially the small leasers should be congratulated on the holding down of the mine accidents, especially those that proved fatal, during the year 1941. During this year the mining industry has had to contend with a class of men who are inexperienced in mining. The fact that the fatals for this year were two less than during 1940 is quite gratifying. These conditions are good but every effort should be made to make a better record as time goes on.

The employee, or miner, has usually little more than the results of his labor to support himself and family on the plane they are all entitled to, and every accident, fatal or otherwise, seriously interferes with his work and the happiness of himself and family. There is nothing sadder than having the breadwinner and head of the family leave home in the morning in a cheerful mood and before night be brought to the morgue a corpse or taken to the hospital a hopeless cripple. Even the smaller accidents are bad. No compensation is paid to an injured man unless he is unable to work for more than ten days. Even though no one is to blame for the accident, the suffering and trouble caused exist just the same.

The cost, inconvenience and worry caused employers when these accidents occur must not be overlooked. In addition to the humane side of such occurrences, time is always lost when an accident occurs, in getting the body or badly broken man from the place where he was killed or injured. The general excitement also causes a slackening of work among employees other than those actually engaged in rescue work. If the operator is carrying his compensation policy on an "experience rating basis," any accident will have a tendency to raise his premium rate.

The small leaser is probably in the class that has the hardest time in keeping the mine in a safe operating condition. This does not apply so much to the properties where the company operates all the machinery and furnishes supplies and the labor is done by lessees, under what is known in the Cripple Creek District as "split check" lease, but where several men take the lease and do the furnishing themselves. Money is often scarce in these cases which makes it difficult to keep the property up as it should be, even if the intentions are the very best. "If that stope had not needed so much timber last month I would have been able to pay most of my grocery bill" is the condition in which many a small leaser finds himself. The accident rate is probably no higher in these cases but the prevention is more difficult.

Compensation insurance for mining is high, as this class of work is considered dangerous, and in recent years weekly benefits to the injured and the doctor and hospital allowances have been increased. The amounts paid to the injured are not at all too high but it has the effect of increasing the cost of compensation insurance.

Compensation insurance is in general carried in one of three ways:

The State Compensation Insurance Fund, private carriers and self insurers.

The State Compensation Insurance Fund is handled by the state and carries the greater part of the compensation insurance in metal mining.

The private carriers handle a small amount of this work.

The self insurers are the ones that carry their own insurance and must have a permit to do so from the State Industrial Commission. All of the insurance is administered by the Industrial Commission.

Recently the insurance carriers have adopted the "experience rating" plan in which the cost of compensation insurance is based on the applicant's accident rating for the past five years. This of course can only apply to the larger companies and has proven quite helpful to those with a good record for the preceding five years but not so good for those with poorer records. The base rate for those not on "experience rating" is $6.65 per hundred of payroll for underground work. This is high but unless the accident rate can be reduced it seems impossible to lower it.

In a general way mine accidents may be put under three classes:

Neglect or inability of the mine operator to furnish proper safety guards and appliances.

Refusal or neglect of employee to use safety guards and appliances.

Accidents classed as "unavoidable."

There seems to be an unfortunate tendency to class accidents as unavoidable when they should not be so designated.

A more detailed report of the individual fatal accidents during the year is given in another part of this report. To bring the conditions more easily to mind a summary of the number of fatal accidents is given here:

NUMBER OF FATAL ACCIDENTS IN MINES AND QUARRIES

1938	1939	1940	1941
24	19	30	28

A very commendable fact in their endeavors to prevent accidents is that the larger companies are still employing high class safety engineers.

While fatal accidents are usually considered to be the worst, those which cause total disability are in many cases more distressing and more expensive. In spite of the slight decrease in fatals in 1941, there are still many more than there should be and everyone is urged to do his level best to reduce them. The commissioner, inspectors, operators, employees and all others engaged in any way at all in mining, should make a personal effort to achieve this result. A reduction of accidents will eventually tend to make compensation insurance less costly. Mining will be in better form and more interesting to capital; there will be less heartaches and suffering and the entire result will be much better. Let us all take these conditions to heart; do our utmost to put mining on a higher plane, and be fair and right to all concerned.

FATAL ACCIDENTS

Underground:

January 7, Joe C. Valencia, of Minturn, age 50, married, shoveler, employed by the Empire Zinc Co., Gilman, Eagle county, was attempting to place the cable in the sheave wheel with one or both hands above his head when the ladder suddenly pulled loose from the timber, causing him to fall backwards down the raise a distance of 70 feet. Lack of judgment of self and foreman.

March 11, Roy Ernest Summers, of Georgetown, age 42, married, miner, employed by the Minnesota Mines, Incorporated, Empire, Clear Creek county, was cleaning track on the manway when something fell down the manway and struck him on top of the head, causing instant death. Cause unknown.

April 5, Vernon E. Wood, of Victor, age 39, married, miner, employed by the Cresson Consolidated Gold Mining and Milling Company of Cripple Creek, Teller county, let go of the ladder which he thought was falling and jumped to the bench below, a distance of 16 feet. He landed on hard rock, fracturing his ankle bones and mashing his lower leg bones. He was operated on on April 10 and again on May 8 and died of the injuries May 9. Lack of judgment.

April 17, Robert Daniel Cordray, of Canon City, age 28, married, trackman, employed by the Golden Cycle Corporation, Cripple Creek, Teller county, was walking down the tunnel and was caught between two cars of moving train. Killed instantly. Carelessness.

May 8, Buford Otis Basnett, of Nederland, age 28, married, miner, employed by The Wolf Tongue Mining Company of Boulder, Boulder county, was moving a mucking machine when the handle which operates the lever got caught on the chute. Basnett reached across to release the handle and the machine completed the operation and crushed him between the machine and wall. Death was instantaneous. Unavoidable accident.

June 6, Charles Cochran, of Leadville, age 30, married, helper, employed by the Climax Molybdenum Company, Climax, Lake county, was helping his jigger boss put a shot in the finger of 140-8 slusher drift when rocks fell down the finger raise, burying the man. Lack of knowledge and disobeying rules.

July 21, W. L. Barber and Irvin Gagon of Salina and Wall Street, ages 56 and 30, married, hoistman and miner, employed by J. B. Mester and A. H. Smith of Boulder, Boulder county, came to their deaths by asphyxiation in the Archer mine shaft. Lack of knowledge of ventilation principles.

August 1, Ernest H. Martensen, of Westcliffe, age 42, miner, leasing from Matthew Reid of Westcliffe, Custer county, was killed by falling 85 feet down a shaft on the Silver Point lode near the Bull Domingo property, Custer county. Cause unknown.

August 9, W. V. Vance, of Telluride, age 28, married, chucktender, employed by the Veta Mines, Incorporated, Telluride, San Miguel county, had helped set machine on top of ground from under which muck had been drawn earlier. While working, the ground caved, covering Vance, who died of suffocation. Lack of judgment of self and fellow workman.

September 11, Edward Reid, of Estes Park, age 29, unmarried, chucktender, employed by S. S. Magoffin, Incorporated, operating in Estes Park, Larimer county, was riding on a car loaded with drill steel behind the jumbo, which was being sidetracked at a point about 13,000 feet in from the portal of the Big Thompson Diversion Water Tunnel. Reid was found lying beside the track near the wall of the tunnel seriously injured after the jumbo had passed. He died September 13. Cause unknown.

October 6, Ed Elmer, age 48, married, timberman and miner, employed by Resurrection Mining Company of Leadville, Lake county, while timbering apparently stepped backward or perhaps slipped and fell backward into the timber slide, falling a distance of approximately 40 feet. He passed away October 7. Unavoidable accident.

October 17, William Neno, of Central City, age 23, unmarried, miner, employed by Chain O' Mines, Incorporated, Central City, Gilpin county, was blasting and breaking boulders on grizzly bars with 12-inch space between the bars. Neno fell through the grizzly bars and down an ore chute 125 feet, causing injuries from which he died March 25, 1942.

December 23, Vern Tovrea and Humphrey Wilhite, of Rifle, ages 25 and 32, married, miners, employed by the United States Vanadium Corporation of Rifle, Garfield county, were spitting a round of holes and one hole went off before expected. Wilhite died December 24 and Tovrea December 25. Cause unknown.

Shaft:

January 22, Pete Atchley, of Telluride, age 27, unmarried, mucker, employed by the Veta Mines, Incorporated, Telluride, San Miguel county, was riding a skip when his head caught at the platform, bending him over backwards. He died January 24. Carelessness.

April 4, Sam Morris, of Central City, age 52, married, lessee, employed by the War Dance Mines, Incorporated, of Idaho Springs, Clear Creek county, was killed when he fell 25 feet down the shaft and drowned. Unavoidable accident.

Surface:

March 1, Frank Vidick, of Leadville, age 38, married, whistlepunk, employed by the Climax Molybdenum Company, Climax, Lake county, was helping dump a rocker bottom car at the outside bins when the car swung back unexpectedly and Vidick was caught between the car and the dump block. Killed instantly. Lack of safety devices and disobeying orders.

August 22. James Foreman, of Grand Lake, age 25, married, laborer, employed by the Platt Rogers Construction Company, operating in Grand county, was helping load a battery haulage motor on a truck near the west portal of the Big Thompson Reclamation Tunnel. In the act of lowering the motor a portion of the apparatus collapsed and a piece of timber fell on Foreman, causing injuries from which he died August 23. Unavoidable accident.

August 23, Ezra H. Simms, of Rifle, age 68, married, mine lessee, employed by the United States Vanadium Corporation. near Rifle, Garfield county, was killed by a fall of rock. Improper mining method.

September 27, Jack T. Smith, of Heeney, age 31, truck driver, employed by the Warner Construction Company, at Green Mountain Dam, Summit county, was hauling material to a separating plant when the fluid drive exploded and a piece of the ore or steel hit him, killing him at once. Probably unavoidable accident.

October 19, R. J. Moffitt of Leadville, age 42, married, car cleaner, employed by the Climax Molybdenum Company, Climax, Lake county, while working around an ore tram was hit by the tram and run over. He died October 22. Unavoidable accident.

November 13, Walter Douglas Caine. of Silverton, age 24, married, laborer, employed by the Highland Mary Mines, Incorporated, Silverton, San Juan county, was riding an aerial tram when the bucket jumped the track, causing the employee to fall 100 feet or more. Carelessness.

Mill:

July 14, Frank Cerniway, of Silverton, age 59, married, wrecking mill, employed by the E. M. Roberts Company of Silverton, San Juan county, fell a distance of 25 feet while wrecking an old mill. Death occurred three hours after the accident. Carelessness.

August 5, H. E. Speer, of Rico, age 51, married, crusherman, employed by the Rico Argentine Mining Company, Dolores county, was running a crusher. The crusher was shut off at the time of the accident and he was attempting to lift a large rock from the jaws of the crusher when he became ill. He died August 6. Unavoidable accident.

October 29, Fred Kitt, of Climax, age 19, unmarried, laborer, employed by the Climax Molybdenum Company, Climax, Lake county, while cleaning an ore bin was pulled into the center of the bin and covered by muck. He was suffocated to death. Carelessness and lack of proper instructions from foreman.

Underground Quarry:

July 29, Herbert Breitkreutz and Paul R. Breitkreutz, of Castle Rock, ages 28 and 51, married, clay miners, employed by Eugene Jackson of Castle Rock, Douglas county, were shoveling clay into a truck in the mine when the top of tunnel caved in, crushing them to death. Lack of judgment on part of employees, main contractor and owner.

LIST OF OPERATING MINES IN VARIOUS COUNTIES IN COLORADO

Operating Mines in Boulder County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Alpine Horn	Sugarloaf	Philip and Lawrence Ward	Sugarloaf	Gold, Silver
April Fool	Sugarloaf	Fortuna Mining and Milling Company	Box 143, Boulder	Tungsten
B and M	Ward	Kent W. Johnson	Alva, Oklahoma	Gold, Silver
Ben C. Lowell	Boulder	Colorado Mining Company	941 Gas & Electric Bldg., Denver	Gold, Silver
Big Five	Ward	Jennie Wren Mines, Inc.	2309 Ivanhoe Street, Denver	Gold, Silver
Black Bird, White Eagle	Boulder	Archer Mine Development Co., John B. Mester	Apt. 12, 2121 12th St., Boulder	Gold, Silver
Black Jack	Ward	G. W. Jackson	618 Symes Bldg., Denver	Silver, Lead
Blue Bird	Nederland	Great Western Silver Mines Corp., W. A. Moore	Gold Hill	Gold, Silver
Boston and Utica	Ward	Ward United Mines Company	302 Denham Bldg., Denver	Gold, Silver
Boulder County	Nederland	Donora Mining Company, Inc.	No. 5 Stewart Bldg., Colorado Springs	Gold, Silver
Cash	Boulder	L. A. Newell and Assoc.	Magnolia Star Rt., Nederland	Gold, Silver
Chingis Kahn	Boulder	J. G. Clark and Assoc.	900 Lincoln Street, Boulder	Gold, Silver
Columbia	Ward	C. A. Heyn and Fred Mott	Ward	Gold, Silver
Conger	Nederland	Vanadium Corporation of America	National State Bank Building, Boulder	Tungsten
Copper King	Boulder	Cobalt Gold Mining Co.	1406 Pearl Street, Boulder	Gold, Silver Copper, Cobalt, Nickel
Cross No. 4	Nederland	The Wolf Tongue Mining Company	310 First National Bank Bldg., Boulder	Tungsten
Dorothy	Sugarloaf	George H. Teal and Assoc.	3134 Sixth Street, Boulder	Tungsten
Ella C.	Boulder	Edwin D. Brooks, Jr.	Gold Hill	Gold, Silver
Emancipation	Boulder	Emancipation and Con. Mines, Inc.	305 First National Bank Bldg., Boulder	Gold, Silver
Emmett	Jamestown	H. M. Williamson and Son	615 U. S. National Bank Bldg., Denver	Fluorspar
Empress	Boulder	W. L. Shaffer and Assoc.	Nederland Star Route, Boulder	Gold, Silver
Eureka	Boulder	Carl Egle and Assoc.	1039 Maxwell Street, Boulder	Tungsten
Gilard	Boulder	Joe Mazzini and Assoc.	Erie	Gold, Silver
Golden Harp	Boulder	Golden Harp Mining and Milling Syndicate	Box 267, Boulder	Gold, Silver
Golden Queen	Ward	Chicago, Golden Queen Mining Co., Joe Walters	Ward	Gold, Silver
Golden Reward	Nederland	A. J. Kraisinger	Nederland	Gold, Silver
Grand View	Boulder	Domino Mining Company	1333 Grandview, Boulder	Tungsten
Herald	Sugarloaf	William Wilson and Assoc.	1932 Arapahoe Street, Boulder	Gold, Silver
Hoosier	Nederland	George Prime and Edward Hollifield	Nederland	Tungsten
Illinois	Nederland	The Wolf Tongue Mining Company	310 First National Bank Bldg., Boulder	Tungsten

Operating Mines in Boulder County, 1941—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
India	Boulder	Edward F. Yates	1430 Arapahoe Street, Boulder	Gold, Silver
Ingram	Boulder	Harrison S. Cobb	Salina Route, Boulder	Gold, Silver
John Jay	Jamestown	Associated Metal Mines, Inc.	327 Cooper Bldg., Denver	Gold, Silver
Little Johnny	Boulder	Aaron Stormberg and W. R. Griswald	242 Fifteenth Street, Boulder	Gold, Silver
Last Chance	Nederland	Thomas M. Walsh and Son	Nederland	Tungsten
Lucky Star	Gold Hill	F. J. Magor and Assoc.	Boulder	Gold, Silver
Lucky Two	Boulder	Domino Mining Company	1333 Grandview, Boulder	Tungsten
Melvina	Boulder	H. M. Gregory Mining Co.	663 Concord Avenue, Boulder	Gold, Silver
Nancy	Boulder	Hard Rock Mining Co., H. D. Pyle	Ward	Gold, Silver
Norway	Eldora	Harrison S. Cobb	Salina Route, Boulder	Gold, Silver
Oregon	Sugarloaf	Jump Mining Company	Box 461, Boulder	Tungsten
Pandora	Nederland	Pandora Metals, Inc.	220 E. & C. Bldg., Denver	Gold, Silver
Peewink	Sugarloaf	Boulder Gold Tungsten Co.	1910 Pine Street, Boulder	Tungsten
Pueblo Belle	Boulder	The S. W. Shattuck Chemical Co.	1805 So. Bannock St., Denver	Gold, Silver
Revenge	Eldora	Renfro and Stanton	3130 Ninth Street, Boulder	Tungsten
Slide	Gold Hill	Slide Mines, Inc.	420 Security Bldg., Denver	Gold, Silver
Smuggler	Lyons	Renfro and Stanton	3130 Ninth Street, Boulder	Gold, Silver
Spider Leg	Nederland	Vanadium Corporation of America	National State Bank Building, Boulder	Tungsten
Star	Nederland	The Wolf Tongue Mining Company	310 First National Bank Bldg., Boulder	Tungsten
Sunshine	Boulder	George D. Parks	Salina Route, Boulder	Gold, Silver
Tanner	Nederland	W. L. and Guy J. Tanner	Room 4, Sullivan Bldg., Boulder	Tungsten
Wano	Jamestown	H. M. Williamson	615 U. S. National Bank Bldg., Denver	Gold, Silver
Wynona	Gold Hill	Yacola Mining Co., A. L. Fullbright	Yakima, Washington	Gold, Silver
Yellow Jacket	Boulder	C. H. Craig	1107 Tenth Street, Boulder	Gold, Silver

Operating Mines in Chaffee County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
American Fluorspar	Salida	American Fluorspar Corp.	126½ E. Pikes Peak, Colorado Springs	Fluorspar
Blue Stone & Tiger Lily	Salida	Salida Fluorspar Co., Frank A. Mansheim	General Delivery, Salida	Fluorspar
Chaffee County Fluorspar	Browns Canon	Chaffee County Fluorspar Corp.	Salida	Fluorspar
Kramer	Browns Canon	Kramer Mines, Inc.	201 Continental Oil Building, Denver	Fluorspar
Madonna No. 6	Monarch	Stanley Kuhn & Assoc.	Salida	Gold, Silver, Lead
Mary Murphy	St. Elmo	Mary Murphy Gold Mining Co.	307 Boston Bldg., Denver	Gold, Silver, Lead
Mill Tunnel	Browns Canon	The Colorado Fluorspar Corp.	944 "F" St., Salida	Fluorspar

Operating Mines in Clear Creek County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Anglo Saxon	Georgetown	Roy Kimbel and Assoc.	Sheldon, Washington	Gold, Silver
Argo Tunnel	Idaho Springs	The Argo Mining, Drainage, Transportation and Tunnel Co.	307 Boston Bldg., Denver	
Atlantic & Rifle	Empire	Minnesota Mines, Inc.	Empire	Gold, Silver
Bride	Idaho Springs	Mrs. Emily Armbuster	Idaho Springs	Gold, Silver, Lead
Brighton	Idaho Springs	Brighton Mining Company	328 Colorado National Bank Bldg., Denver	Gold, Silver, Lead
Central Tunnel	Idaho Springs	E. G. Heckendorf	Littleton	Gold, Silver
Clear Creek & Gilpin Tunnel	Dumont	Joseph P. Ruth and Assoc.	425 Continental Oil Building. Denver	Gold, Silver
Crystal	Idaho Springs	Crystal Mining Associates, Robert Hume	Idaho Springs	Gold, Silver
Diamond Joe	Idaho Springs	Specie Mining Company	1901 Lawrence St., Denver	Gold, Silver
Dixie	Idaho Springs	Giles and Company	4663 Humboldt Street, Denver	Gold, Silver
Donaldson	Idaho Springs	Belton Mining Corp., Harry E. Roster	Idaho Springs	Gold, Silver
Donna Juanita	Idaho Springs	Gold Mines Consolidated, Inc.	315 Colorado Bldg., Denver	Gold, Silver
Elliott Barber and Lincoln	Idaho Springs	Alma Lincoln Mining Co., C. M. Lyon	Idaho Springs	Gold, Silver
Freighters Friend	Idaho Springs	Freighters Friend Mining Company, Arthur Partenier	Idaho Springs	Gold, Silver
Gilt Edge	Idaho Springs	Marvin Smith and H. C. Fishback	Idaho Springs	Gold, Silver
Gold Dirt	Empire	Indiana Empire Gold Mine Trust, E. H. York	Empire	Gold, Silver
Gold Fissure	Empire	Copper Cone, Inc.	Empire	Gold, Silver, Copper
Gold King	Idaho Springs	Gold King Mining Co., Glen Shaw	Idaho Springs	Gold, Silver
Golden Edge	Idaho Springs	John Mollard and Co.	Idaho Springs	Gold, Silver
Hamill Tunnel	Silver Plume	Buckley Leasing Co.	Silver Plume	Gold, Silver, Lead
Hyland	Idaho Springs	W. H. Brooks and A. E. McCall	Idaho Springs	Gold, Silver
Johnny Bull	Silver Plume	Johnny Bull Mines, F. C. Rowe	Silver Plume	Gold, Silver
Jo Reynolds	Lawson	E. H. Geary Partnership	333 First National Bank Bldg., Denver	Gold, Silver
Lamartine	Idaho Springs	Lamartine Mines, Inc.	Idaho Springs	Gold, Silver
Little Champion	Idaho Springs	Richard Nankarvis and W. W. Murphy	Idaho Springs	Gold, Silver
Lombard	Idaho Springs	Imperial Gold Mining Co., E. K. McElroy	Idaho Springs	Gold, Silver
Lone Tree	Idaho Springs	H. J. Thraynor	Idaho Springs	Gold, Silver
Lord Byron	Idaho Springs	Silver Spruce Gold Mining Co., C. M. Lyon	Idaho Springs	Gold, Silver
M and M Tunnel	Idaho Springs	Ute Creek Syndicate	Idaho Springs	Gold, Silver
Mattie	Idaho Springs	Clear Creek Corp., N. M. Richman	Idaho Springs	Gold, Silver
Mendota	Silver Plume	Mendota Mining and Milling Co.	735 Majestic Bldg., Denver	Gold, Silver, Lead, Zinc
Paymaster	Empire	W. H. Westbrook and Assoc.	Empire	Gold, Silver
Red Elephant	Lawson	Red Elephant Metals, Inc.	Lawson	Gold, Silver, Lead
Red Jacket	Idaho Springs	M. Moore and Assoc.	Idaho Springs	Gold, Silver
Saint George	Georgetown	L. R. Frankes and Assoc.	Idaho Springs	Gold, Silver, Lead

Operating Mines in Clear Creek County, 1941—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Salisbury	Idaho Springs	J. B. Furstenberg	2711 Stout St., Denver	Gold, Silver
San Juan	Idaho Springs	Carl, Clifford and Gilbert Beach	Idaho Springs	Gold, Silver
Smuggler	Silver Plume	Mile High Mining Company	West 38th and Howell Ave., Wheatridge	Gold, Silver, Lead
Specie Payment	Idaho Springs	Specie Mining Company	1901 Lawrence Street, Denver	Gold, Silver
Turner	Idaho Springs	Frank Ross, Jr., and Assoc.	Idaho Springs	Gold, Silver
Upper Santiago	Georgetown	J. R. Campbell and Assoc.	Georgetown	Gold, Silver
West Santa Fe	Idaho Springs	Charles Taylor and Assoc.	Idaho Springs	Gold, Silver
Williams	Idaho Springs	Williams Mining Company	Box 321, Idaho Springs	Gold, Silver

Operating Mines in Conejos County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
King Turquoise	Manassa	W. P. King	Manassa	Turquoise

Operating Mines in Custer County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
General Vermiculite	Querida	Archie McGregor	Ilse	Vermiculite
Lucky Strike No. 2	So. Hardscrabble	Custer County Molybdenum Company	Box 297, Colorado Springs	Molybdenum
Maxine Elliott	Silver Cliff	Robert T. Wolff	Silver Cliff	Gold, Silver

Operating Mines in Dolores County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Emma	Dunton	Modern Gold Mines, Inc.	913 Midland Savings Bldg., Denver	Gold, Silver
Mount Pleasant	Rico	Mount Pleasant Mining Co.	2311 Northwestern Ave., Racine, Wisconsin	Gold, Silver, Tellurium
Nigger Baby	Rico	Markey Brothers	Rico	Lead, Zinc
Rico-Argentine	Rico	Rico Argentine Mining Company	Dooley Block, Salt Lake City, Utah	Gold, Silver, Copper, Lead, Zinc
St. Louis Tunnel	Rico	St. Louis Smelting & Refining Co.	722 Chestnut St., St. Louis, Mo.	Gold, Silver, Copper, Lead, Zinc

Operating Mines in Eagle County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Ben Butler	Belden Canon	Ben Butler Mining Corp., W. T. Brinton	Republic Bldg., Denver	Gold, Silver
Eagle Mines	Gilman	New Jersey Zinc Co.	160 Front St., New York, N. Y.	Gold, Silver, Copper, Lead, Zinc

Operating Mine in Fremont County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Mill Tailings Dump	Florence	E. J. Mining & Milling Co.	Florence	Gold, Silver

Operating Mines in Garfield County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
East Side Tunnel	East Rifle Creek	Garfield Vanadium Corp.	Rifle	Vanadium
Gray Eagle	East Elk Creek	Gray Eagle Mining Company	Box 457, Newcastle	Gold, Silver
Payday	Rifle	R. E. Trail, J. M. Trail, Bud Rowe and Wilbur Gardner	Rifle	Vanadium
Rifle	East Rifle Creek	U. S. Vanadium Corp.	30 E. 42nd St., New York, N. Y.	Vanadium

Operating Mines in Gilpin County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Arizona	Russell Gulch	Chas. W. Elkins and Assoc.	Idaho Springs	Gold, Silver
Brookfield	Russell Gulch	Chas. W. Elkins and Assoc.	Idaho Springs	Gold, Silver
Caldona	Central City	J. H. Taylor, L. L. Scott and A. O. Clark	Central City	Gold, Silver
Chain O' Mines	Central City	Chain O' Mines, Inc.	Central City	Gold, Silver
Colorado Carr	Central City	The California-Hidden Treasure Mines Company	307 Boston Bldg., Denver	Gold, Silver
Mammoth	Central City	W. H. Fackler and Assoc.	Central City	Gold, Silver
Monmouth-Kansas	Central City	The California-Hidden Treasure Mines Company	307 Boston Bldg., Denver	Gold, Silver
Perigo	Rollinsville	Tip Top Gold Mines, Inc.	2379 Dexter Street, Denver	Gold, Silver
Pittsburg Group	Central City	Kingmill Mines, Inc.	Central City	Gold, Silver
Powers	Central City	Lu Ev Mining Co., c/o J. G. McGrath	Central City	Gold, Silver
Various Claims in Nevadaville District	Idaho Springs	The California-Hidden Treasure Mines Company	307 Boston Bldg., Denver	Gold, Silver

Operating Mines in Grand County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Ready Cash	Empire	N. R. Miner and M. H. McCain	Empire	Silver, Lead, Zinc
Wolverine	Grand Lake	Routt S. Bryant and Assoc.	Grand Lake	Gold, Silver, Lead

Operating Mines in Gunnison County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Burleson	Ohio City	Burleson Mines, Inc.	Salida	Gold, Silver
Carter	Ohio City	The Carter Mines Company	Ohio City	Gold, Silver, Lead
Independent	Gunnison	Dr. Ervine Hunter	210 First National Bank Bldg., Colorado Springs	
Vermiculite	Gunnison	Vermiculite Mining Co. of America	406 Thorpe Bldg., Minneapolis, Minnesota	Vermiculite
Wahl	Tincup	Eugene McCormack	801 Lowell Blvd., Denver	

Operating Mines in Hinsdale County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Empire Chief	Lake City	Davis Gold Mines Company	Lake City	Gold, Silver, Lead, Copper, Zinc
Golconda	Lake City	Davis Gold Mines Company	Lake City	Gold, Silver, Lead, Copper, Zinc

Operating Mine in Jackson County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Western Fluorspar	Cowdrey	Western Fluorspar Corporation	322 Hynds Bldg., Cheyenne, Wyoming	Fluorspar

Operating Mines in Lake County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Amity Dump	Leadville	Koken Brothers	140 West 7th St., Leadville	Gold
Climax	Climax	Climax Molybdenum Company	Continental Oil Bldg., Denver	Molybdenum
Commerce	Leadville	Commerce Lease, John L. Joyce	301 East 5th St., Leadville	Silver, Lead
Dolly B.	Upper Evans Gulch	Jack McCaughan and Assoc.	Leadville	Gold, Silver, Lead

Ella Tunnel	Evans Gulch, Leadville	T. J. Ahern and Assoc.	Leadville	Gold, Silver, Lead
Forbes Tunnel	Evans Gulch	New Monarch Lease	215 West 6th St., Leadville	Gold, Silver, Lead
Jitterbug	Stumptown	O'Leary Bros. and Assoc.	1400 Harrison Ave., Leadville	Gold
Killarny	Leadville	Paul Clark	182 Mar Vista Ave., Pasadena, California	Gold
Louisville Dump	Iron Hill	Ellis Webster	Leadville	Silver, Lead, Zinc
Matchless	Fryer Hill, Leadville	Dr. Walter F. O'Brien	Leadville	
North Moyer Dump	Iron Hill	W. J. Miller	900 Block, Leadville	Lead, Zinc
President	Breece Hill	President Mining and Milling Co.	328 East 10th St., Leadville	Gold
Printer Boy	Leadville	Charles M. Bowen	211 West 8th St., Leadville	Gold
Resurrection and Yak	Upper Evans Gulch	Resurrection Mining Co.	Box 936, Leadville	Gold, Silver, Lead, Zinc
St. Kevin	Leadville	Sterling Mining Company	424 East 11th St., Leadville	Gold, Silver, Lead
Triumph	Johnny Hill	Murrill and Robert	218 East 10th St., Leadville	Gold, Silver, Lead
Tucson	Iron Hill	Axel Lind Lease	419 East 2nd St., Leadville	Silver, Lead
Upper St. Louis	Breece Hill	Tim Riley and Assoc.	Leadville	Gold
Valley	Evans Gulch, Leadville	Valley Leasing Company	Box 266, Leadville	Gold, Silver, Lead

Operating Mines in La Plata County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Bessie G.	Hesperus	Bert Thompson and Assoc.	147 E. 9th St., Durango	Gold, Silver
Escalante	Hesperus	J. E. Boletin, Bert Thompson and Thos. Hatfield	147 E. 9th St., Durango	Gold, Silver
May Day	Hesperus	Garvin A. Snook and Assoc.	Hesperus	Gold, Silver
Neglected	Durango	Frank E. Rand, Jr., and Assoc.	Santa Fe, New Mexico	Gold, Silver

Operating Mines in Larimer County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Cash	Eggers	Cash Gold Company	Eggers	Gold, Silver, Lead, Copper
Little Mary Mason	Masonville	O. U. Harrington and Assoc.	Masonville	Gold, Silver
Rockfield	Log Cabin	S. A. Prendergast	Eggers	Gold, Silver

Operating Mines in Mineral County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Last Chance, New York, Amethyst, Happy Thought, Equinox, Pittsburgh and Kanawha	Creede	Emperius Mining Company	695 Locust St., Denver	Silver
Monon	Creede	Weaver-Oates Lease, c o A. J. Weaver	Creede	Silver
Wagon Wheel Gap	Wagon Wheel Gap	The Colorado Fuel & Iron Corp.	Pueblo	Fluorspar

Operating Mine in Montezuma County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Red Arrow	Mancos	The Red Arrow Gold Corp.	Mancos	Gold, Silver, Lead

Operating Mines in Montrose County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Badger	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Beta	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Bitter Creek	Naturita	Vanadium Corp. of America	420 Lexington Ave., New York City, N. Y.	Carnotite
Black Diamnod	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Cashin	La Sal			Copper
Coloradium	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Cripple Creek	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Dolores	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Emma May	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Happy Thought	Bull Canon	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite

Heiro	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Honey Moon	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Jo Junior	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Julian Group	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Lease on Gyp No. 1	Naturita	Vanadium Corp. of America	420 Lexington Ave., New York City, N. Y.	Carnotite
Lease on Helen C.	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Lease on Little Gyp	Naturita	Vanadium Corp. of America	420 Lexington Ave., New York City, N. Y.	Carnotite
Little Dick	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Long Park No. 6	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Maggie C.	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Open Cut	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Ophir	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
R. A. M.	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Rambler	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Raven	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Saucer Basin	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Sharkey	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Tripod	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
U. S. Vanadium Corp. Salt Works	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Salt
Valley View	Uravan	U. S. Vanadium Corporation	30 E 42nd Street, New York City, N Y.	Carnotite
Vanadite	Naturita	Vanadium Corp. of America	420 Lexington Ave., New York City, N. Y.	Carnotite
Yellow Jacket	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite
Yellow Spot	Uravan	U. S. Vanadium Corporation	30 E. 42nd Street, New York City, N. Y.	Carnotite

Operating Mines in Ouray County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Chief Ouray	Ouray	Chief Ouray Cons. Mines, Inc.	Ouray	Gold, Silver
Franz	Ouray	G. A. Franz, Inc.	Ouray	Silver, Lead, Zinc
Idarado	Ouray	Idarado Mining Company	14 Wall St., New York City, N. Y.	Gold, Silver, Lead, Copper
King Lease	Ouray	The King Lease, Inc	Ouray	Gold, Silver, Lead, Copper
Pony Express	Ouray	Frank Fidel and Assoc.	Ouray	Gold, Silver, Copper, Lead, Zinc
Silver Tip-Gold Crown	Ouray	Silver Tip-Gold Crown M. & M. Co.	Suite 906, Union Trust Bldg., Washington, D. C.	Gold, Silver, Copper, Lead, Zinc
Sonza	Ouray	J. R. Sonza Lease	Ouray	Gold, Silver, Copper, Lead, Zinc
Syracuse Tunnel	Ouray	John Zanett & Sons	Ouray	Silver, Lead
Wanakah Dumps	Ouray	Roy and Franklin Shaffer	Ouray	Gold, Silver

Operating Mines in Park County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
American	Alma	J. N. Redman	502 California Bldg., Denver	Gold, Silver
Barcoe Tunnel	Fairplay	Barcoe Mining Company	1002 Patterson Bldg., Denver	Gold, Silver
Butte	Alma	London Butte Gold Mines Co.	529 Equitable Bldg., Denver	Gold, Silver
London	Alma	The London Mines & Milling Co.	Alma	Gold, Silver
Magnolia	Alma	Magnolia Gold Mining Co.	Box 139, Alma	Gold, Silver
Phillips	Alma	Buckskin Joe Mines, Ltd.	Alma	Gold, Silver, Lead, Zinc

Operating Mines in Pitkin County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Aspen Leases	Aspen	Aspen Leases, D. P. Rohlfing	Aspen	Silver, Lead
Midnight	Aspen	The Midnight Mining Co.	Box 188, Aspen	Silver, Lead, Zinc
Molly Gibson	Aspen	Herron Brothers	Aspen	Silver, Lead
Porphyry Mountain	Aspen	The Porphyry Mtn. Gold Mines Co.	Aspen	Gold, Silver, Lead

Operating Mines in Rio Grande County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Spiegal	Del Norte	W. H. and G. O. Cochran	Del Norte	Iron
Summitville	Summitville	Summitville Mines, Inc.	Summitville	Gold

Operating Mine in Routt County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Rabbit Ear	Steamboat Springs	Gustavus Sessinghaus	1520 Gaylord St., Denver	Manganese

Operating Mines in Saguache County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Hartman Jefferson	Mineral Hot Springs	Triple T. Mining Co., J. H. Triplett	Salida	
Josie K. Folsom	Del Norte	Josie K. Folsom M. & M. Co.	4280 A. Holly Ave., St. Louis, Missouri	Gold, Silver
Pershing	Villa Grove	Dr. Mary E. Bates and A. E. Reilly	209 16th St., Denver	Manganese
Rawley No. 2	Bonanza	Eric Eastman	Villa Grove	Silver, Lead, Copper, Zinc
Rawley No. 12	Bonanza	E. D. Van Keuren	913 Midland Savings Bldg., Denver	Silver, Lead, Copper, Zinc
St. Louis	Bonanza	St. Louis Smelting & Refining Co. Pratt-Bonanza M. & M. Co.	722 Chestnut St., St. Louis, Mo. Bonanza	Gold, Silver, Lead, Copper
Warwick-Minnie Lynch	Bonanza	Nicholas Keserick & Melvin Brugger	Bonanza	Gold, Silver, Lead, Copper, Zinc
Wheel of Fortune	Bonanza	P. M. Wallin	Bonanza	Copper, Lead, Zinc

Operating Mines in San Juan County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Brooklyn	Silverton	Brooklyn Claims, Inc.	947 Equitable Bldg., Denver	Gold, Silver, Copper, Lead
Caledonian	Silverton	Caledonian M. & M. Co., Geo. T. Morris	Silverton	Gold, Silver, Copper, Lead, Zinc
Galty Boy	Silverton	C. Tim Dantziger and Assoc.	Silverton	Tungsten
Good Hope	Silverton	Cornelius & Sherman	Durango	Gold, Silver, Lead

Operating Mines in San Juan County, 1941—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Highland Mary	Silverton	Highland Mary Mines, Inc.	900 Land Bank Bldg., Kansas City, Mo.	Gold, Silver, Lead, Copper
Martin Group	Eureka	Habita Gold Mining Co., Inc.	744 Broad St., Newark, N. J.	Gold, Silver, Lead, Copper, Zinc
Mountain Queen	Silverton	Eureka Min. & Mill. Co., A. R. Walker	Silverton	Gold, Silver, Copper, Lead
Pride of the West	Silverton	Denver Equipment Co., Agent	1400 17th St., Denver	Gold, Silver, Copper, Lead, Zinc
Queen City Group	Silverton	Frank Sandri	Silverton	Gold, Silver, Copper, Lead, Zinc
Shenandoah-Dives	Silverton	Shenandoah-Dives Mining Company	1000 Temple Building, Kansas City, Mo.	Gold, Silver, Copper, Lead
Silver Lake	Silverton	American Smelting & Refining Co.	Salt Lake City, Utah	Gold, Silver, Copper, Lead
Sunnyside	Eureka	The Sunnyside Mining & Milling Co.	85 Exchange St., Portland, Me.	
Tom Moore	Silverton	Habita Gold Mining Co., Inc.	744 Broad St., Newark, N. J.	Gold, Silver, Copper, Lead, Zinc
Treasure Mountain	Silverton	Treasure Mountain Gold Mining Co.	226 Midland Sav. Bldg., Denver	Gold, Silver

Operating Mines in San Miguel County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Allegheny	Telluride	Frank Dalle	Telluride	Gold, Silver
Alta-St. Louis	Ophir	Alta-St. Louis Mining Co.	2608 Arthington St., Chicago, Ill.	Gold, Silver, Lead, Copper
Argentine Group	Telluride	Tomboy Gold Mines, Inc.	Telluride	Gold, Silver, Lead, Copper, Zinc
Fall Creek	Placerville	The Vanadium Corp. of America	420 Lexington Ave., New York City, N. Y.	Roscoelite
Lease on Bessie 1	Uravan	U. S. Vanadium Corporation	30 East 42nd St., New York City, N. Y.	Carnotite
Lease on Moquie Jug No. 1	Uravan	U. S. Vanadium Corporation	30 East 42nd St., New York City, N. Y.	Carnotite
Lease on Moquie Jug No. 2	Uravan	U. S. Vanadium Corporation	30 East 42nd St., New York City, N. Y.	Carnotite
Lookout	Norwood	George McKee	Norwood	Carnotite
Mexico	Bull Canyon	U. S. Vanadium Corporation	30 East 42nd St., New York City, N. Y.	Carnotite
Nellie & Laura	Telluride	Nardin Mining Company	Box 562, Telluride	Gold, Silver
New Dominion	Ophir	Ray Belisle and Assoc.	Ophir	Gold, Silver, Lead, Copper, Zinc

North Continent	Cedar	North Continent Mines, Inc.	Cedar	Vanadium
Omega	Placerville	The Vanadium Corp. of America	420 Lexington Ave., New York City, N. Y.	Vanadium
Pike County	Ophir Loop	Charles W. and Millard Fairlamb	Telluride	Gold, Silver, Lead
Quaker	Bull Canyon	U. S. Vanadium Corporation	30 East 42nd St., New York City, N. Y.	Carnotite
Rim Rock Blues	Uravan	U. S. Vanadium Corporation	30 East 42nd St., New York City, N. Y.	Carnotite
Spud Patch	Naturita	The Vanadium Corp. of America	420 Lexington Ave., New York City, N. Y.	Carnotite
Tea Pot Dome	Uravan	U. S. Vanadium Corporation	30 East 42nd St., New York City, N. Y.	Carnotite
Telluride	Telluride	Telluride Mines, Inc.	Telluride	Gold, Silver, Lead
W. G. Clagett	Ophir	Dr. W. G. Clagett	Reibold Bldg., Dayton, Ohio	Gold, Silver, Lead, Copper
Yellow Jacket	Ophir	Pollman Brothers	Telluride	Gold, Silver, Lead, Copper

Operating Mines in Summit County, 1941

Name of Mine	Location	Operator	P. O. Address	Character of Product
Big Four	Kremmling	Walter McDaniel, Co-owner	Kremmling	Gold, Silver, Lead, Zinc
Bullion	Montezuma	G. W. Goodman	Montezuma	Gold, Silver, Lead, Copper
Cabinet Group	Kokomo	Cabinet Mining Company, Mrs. L. N. Simpson	Kokomo	Gold, Silver, Lead
Fredonia	Breckenridge	Melvin Brugger and D. F. Miner	Breckenridge	Gold, Silver
Florado	Montezuma	Florado Mining Company	925 U. S. National Bank Bldg., Denver	Gold, Silver, Lead
Gold Crest	Kokomo	Gold Crest Mining Company	1007 Twelfth Street, Golden	Gold, Silver
Jumbo	Breckenridge	Jumbo Properties, Inc.	708 Colorado Bldg., Denver	Gold, Silver
Last Dollar	Breckenridge	Albert Blanc, Frank Graco and Assoc.	720 Blake, Glenwood Springs	Gold, Silver
Little Fool	Breckenridge	F. O. Daines	Box 584, Rt. 1, Canon City	Gold, Silver
Maid of Orleans	Montezuma	W. I. Spratt and Art A. Holmes	Dillon	Gold, Silver, Lead
Marlin	Montezuma	Marlin Mines, Inc.	860 Omaha National Bank Bldg., Omaha, Nebr.	Gold, Silver, Lead, Zinc
Pennsylvania	Montezuma	Carl Petterson and Assoc.	4397 Tejon Street, Denver	Gold, Silver, Lead
Waterloo, New York, Silver King	Montezuma	Plymouth Mining Company	321 Bijou St., Colorado Springs	Gold, Silver, Lead
Washington	Kokomo	A. H. Rhine	Kittredge Building, Denver	Gold, Silver, Lead, Zinc
Wilfley	Kokomo	Wilfley Leasing Co., Chas. G. Blaha	Kokomo	Gold, Silver, Lead, Zinc

Operating Mines in Teller County, 1941

Name of Mine	Location	Operator or Owner	P. O. Address	Character of Product
Ajax	Battle Mountain	Golden Cycle Corporation	Box 127, Cripple Creek	Gold
Anchoria Leland	Gold Hill	Golden Cycle Corporation	Box 127, Cripple Creek	Gold
Anna J.	Bull Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Cameron	Grassy Gulch	Cameron Gold Mines, Inc.	Box 295, Cripple Creek	Gold
Cardinal Tunnel	Lower Gold Hill	Cardinal Great West Lode Mines	University Place Station, Lincoln, Nebraska	Gold
Carlton Tunnel	Four Mile Creek	Golden Cycle Corporation	Box 127, Cripple Creek	Gold
Colorado City	Bull Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Cresson	Bull and Raven Hills	Cresson Consolidated Gold M. & M. Co.	Box 127, Cripple Creek	Gold
Damon	Cripple Creek	Jerry Johnson Gold Mining Co.	Exchange Nat'l Bank Bldg., Colorado Springs	Gold
Deadwood	Bull Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Elkton Shaft	Raven Hill	The Elkton Company	Box 127, Cripple Creek	Gold
El Paso	Beacon Hill	Gold Producers, Inc.	520 U. S. National Bank Bldg., Denver	Gold
Empire Shaft	Bull Hill	Empire Lee Mining Company	Box 127, Cripple Creek	Gold
Favorite	Bull Hill	Stratton Cripple Creek M. & D. Co.	Box 146, Cripple Creek	Gold
Gleason	Bull Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Glorietta	Independence	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Gold Bond	Lower Gold Hill	Golden Swan Mining Company	206 Mining Exchange Bldg., Colorado Springs	Gold
Gold Sovereign	Bull Hill	Cresson Consolidated Gold M. & M. Co.	Box 127, Cripple Creek	Gold
Grace Greenwood	Gold Hill	The Leclair Consolidated Mines Co.	Box 127, Cripple Creek	Gold
Hull City	Independence	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Jack G.	Raven Hill	The Doctor-Jack Pot Mining Co.	Box 127, Cripple Creek	Gold
Joe Dandy	Raven Hill	Joe Dandy Mines Company	Independence Building, Colorado Springs	Gold
John A. Logan	Bull Hill	Stratton Cripple Creek M. & D. Co.	Box 146, Cripple Creek	Gold
Lee Shaft	Bull Hill	The Empire Lee Mining Company	Exchange Nat'l Bank Bldg., Colorado Springs	Gold
Longfellow	Bull Hill	Stratton Cripple Creek M. & D. Co.	Box 146, Cripple Creek	Gold
Los Angeles Dump	Bull Hill	Stratton Cripple Creek M. & D. Co.	Box 146, Cripple Creek	Gold
Mary Nevin	Beacon Hill	Gold Empire, Inc.	431 U. S. National Bank Bldg., Denver	Gold
Morning Glory	Raven Hill	The Doctor-Jack Pot Mining Co.	Box 127, Cripple Creek	Gold
Nellie V.	Squaw Mountain	Quinn & McGill M. & S. Company	437 Broadway, Denver	Gold
New Gold Dollar	Beacon Hill	The New Gold Dollar Mining Co.	Box 127, Cripple Creek	Gold
Part of Los Angeles Dump	Bull Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Patti Rosa	Bull Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Pharmacist	Bull Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Pinto	Bull Hill	Free Coinage Gold Mining Co.	819 N. Wahsatch, Colorado Springs	Gold
Portland No. 1-No. 2	Battle Mountain	The United Gold Mines Company	Box 127, Cripple Creek	Gold

Princess E.	Raven Hill	The Elkton Company	Box 127, Cripple Creek	Gold
Proper	Gold Hill	Stratton Cripple Creek M. & D. Co.	Box 146, Cripple Creek	Gold
Rose Nicol	Battle Mountain and Bull Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Sangre de Cristo	Tenderfoot Hill	The Tenderfoot Mining Company	1010 First Nat'l Bank Bldg., Denver	Gold
School Section, Blk. 8	Grassy Gulch	Kyner Leasing Co., Wm. A. Kyner	Cripple Creek	Gold
South Burns	Bull Hill	Acacia Gold Mines Company	819 N. Wahsatch, Colorado Springs	Gold
Strong	Battle Mountain	Strong Mines, Inc.	826 Continental Oil Bldg., Denver	Gold
Tateman	Bull Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Theresa	Lower End Bull Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Vindicator	Independence	The United Gold Mines Company	Box 127, Cripple Creek	Gold
W. P. H.	Iron Clad Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold
Wild Horse No. 1	Bull Hill	The United Gold Mines Company	Box 127, Cripple Creek	Gold

Operating Quarries and Clay Pits, 1941

Town	County	Name	Product	Operator	Address
Lyons	Boulder	St. Vrain Red Sandstone	Sandstone	St. Vrain Quarries — Chester Brodie	Lyons
Salida	Chaffee	Colorado Feldspar	Feldspar	The Colorado Feldspar Corp. —Mahlan Susong	Canon City
Monarch	Chaffee	Monarch	Limestone	The Colorado Fuel & Iron Corp.	Continental Oil Bldg., Denver
Castle Rock	Douglas	Johnson Clay	Plastic Clay	H. G. Johnson	Castle Rock
Sedalia	Douglas	Three Musketeers	Feldspar	The M. & S., Inc.	1333 W. Maple, Denver
Manitou Springs	El Paso	Greenstone	Building Stone	N. L. Ross	119½ E. Pikes Peak, Colorado Springs
Manitou Springs	El Paso	Holly No. 2	Limestone	Thomas & Brown Lime Co.	607 Thatcher Bldg., Pueblo
Colorado Springs	El Paso	Lennox Breed	Limestone	Holly Sugar Corporation	Colorado Springs
Canon City	Fremont	B. D., Garden Park & M. Sand	Fire Clay	The Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Burnito	Sandstone	S. Vernon St. John	214 Macon Ave., Canon City
Canon City	Fremont	Diamond Fire Brick Plant	Fire Brick	The Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Eight Mile Park School Section	Feldspar and Mica	The Colorado Feldspar Corp. —Mahlan Susong	Canon City
Canon City	Fremont	H. Rock and Shaw Park	Fire Clay	The Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Kerrigan Gypsum	Gypsum	E. L. Kerrigan	Penrose
Canon City	Fremont	Loraine	Feldspar	The Colorado Feldspar Corp. —Mahlan Susong	Canon City
Canon City	Fremont	Mica Hill Lode	Feldspar-Mica	Robert A. Shipley	Canon City
Canon City	Fremont	Myra	Fire Clay	The Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Pig Back	Shale	The Diamond Fire Brick Co.	Canon City
Portland	Fremont	Portland Cement	Limestone and Shale	Ideal Cement Company	507 Denver Nat'l Bldg., Denver
Wellsville	Fremont	Rogers	Limestone	George R. Rogers	648 H St., Salida
Canon City	Fremont	Shaft Flint Clay	Fire Clay	The Diamond Fire Brick Co.	Canon City
Parkdale	Fremont	Silica	Silica	The Standard Fire Brick Co.	24th and Albion, Pueblo
Parkdale	Fremont	Spikebuck Feldspar	Feldspar	The M. & S., Inc.	1333 W. Maple, Denver
Canon City	Fremont	Swastika	Fire Clay	The Diamond Fire Brick Co.	Canon City
Wellsville	Fremont	Taylor Gulch	Limestone	Frank H. Norberg, Inc.	703 U. S. Natl. Bank Bldg., Denver
Glenwood Springs	Garfield	Glenwood	Limestone	Holly Sugar Corporation	Golden Cycle Building, Colorado Springs
Marble	Gunnison	Yule Marble	Marble	Yule Colorado Marble Company	Proctor, Vermont
Golden	Jefferson	Coors Clay Mines & Porcelain Plant	Clay	Coors Porcelain Company	Golden

Golden	Jefferson	Golden Clay Mines & Brick Company	Clay	George W. Parfet Estate, Inc.	Linder Block, Golden
Golden and Denver	Jefferson	Johnson Clay Mine & Brick Plant	Clay	Denver Sewer Pipe and Clay Co.	Curtis and Broadway, Denver
South Platte	Jefferson	Jumbo	Feldspar	The M. & S., Inc.	1333 W. Maple, Denver
Golden and Denver	Jefferson	North Golden Clay Mine & Brick Company	Clay	George W. Lindsay	1931 Forest St., Denver
South Platte	Jefferson	Oregon No. 2	Feldspar	The M. & S., Inc.	1333 W. Maple, Denver
South Platte	Jefferson	Pasty	Feldspar	The M. & S., Inc.	1333 W. Maple, Denver
Golden	Jefferson	Rockwell Clay	Clay	George W. Parfet Estate, Inc.	Linder Block, Golden
Golden	Jefferson	Rubey Clay	Clay	The H. M. Rubey Clay Co.	Linder Block, Golden
Laporte	Larimer	Alabaster Quarry and Plant	Alabaster	American Onyx Alabaster Co. —J. Edan Roberts	Laporte
Laporte	Larimer	Boettcher Cement Quarries and Mills	Limestone, Shale	Ideal Cement Company	507 Denver Nat'l Bldg., Denver
Laporte	Larimer	Clark Quarries	Limestone	Clark Quarries, Inc.	Box 503, Fort Collins
Laporte	Larimer	Gypsum	Gypsum	S. H. Roberts and Assoc.	Laporte
Bellvue	Larimer	Josefson	Limestone	John and Victor Josefson	Box 21, Bellvue
Loveland	Larimer	Loveland Brick Plant and Clay Mine	Clay-Brick	The Denver Pressed Brick Co.	W. 16th and Clay Sts., Denver
Loveland	Larimer	U. S. Gypsum Quarries & Plant	Gypsum	United States Gypsum Co.	300 W. Adams, Chicago, Ill.
Trinidad	Las Animas	Trinidad Brick and Tile	Shale, Brick, Tile	The Trinidad Brick & Tile Co.	Trinidad
Lake George	Park	Berryl Lode	Feldspar	Lester C. Martin	Lake George
Lake George	Park	Blue Bird	Feldspar	I. J. Myers	413 N. 4th St., Canon City
Lake George	Park	Last Chance	Feldspar, Mica	H. C. Gilley	Lake George
Stone City	Pueblo	Nellie Helen	Fire Clay	Arthur L. Wands	Stone City
Pueblo	Pueblo	Rock Creek Clay	Fire Clay	The Standard Fire Brick Co.	Box 654, Pueblo
Pueblo	Pueblo	Standard Fire Brick Plant	Tile and Brick	The Standard Fire Brick Co.	Box 654, Pueblo
Stone City	Pueblo	Stone City Clay	Fire Clay	The Pueblo Clay Products Co.	Thatcher Building, Pueblo
Pueblo	Pueblo	Summit Pressed Brick & Tile Plant	Building Brick and Tile	The Summit Pressed Brick & Tile Company	13th and Erie, Pueblo
Pueblo	Pueblo	Vulcan Clay	Fire Clay	The Standard Fire Brick Co.	Box 654, Pueblo
Divide	Teller	Ballast Pit	Gravel	Colorado Trading & Transfer Company	349 E. Bennett, Cripple Creek...
Divide	Teller	D and S	Feldspar	Glen Spielman	Woodland Park

Operating Placers and Dredges, 1941

Name	Town	County	Operator	Address
Vinegar	Pinecliffe	Boulder	More Minerals Mining & Milling Co.	c/o A. C. More, Wall Street, via Boulder
Blakes Wonder Placer	Buena Vista	Chaffee	Mizpah Gold Mines Company	Buena Vista
Driscoll	Lost Canon	Chaffee	F. H. Wolfe and L. J. Hesser	Granite
Franklin Placer	Granite	Chaffee	T. W. Blake and Charles Franklin	Granite
Independent	Granite	Chaffee	W. F. Wolf	Granite
Banner	Idaho Springs	Clear Creek	Banner Mining Company	1910 1st Nat'l Bank Bldg., Oklahoma City, Okla.
Gamble Gulch	Rollinsville	Gilpin	Gamble Gulch Mining Co.	Rollinsville
Gilpin	Blackhawk	Gilpin	C. W. McElwee and R. L. James	Central City
Nugget	Blackhawk	Gilpin	Square Deal Placer Company	708 East Nat'l Bank Bldg., St. Paul, Minnesota
Pleasant Valley	Russell Gulch	Gilpin	W. P. Swerdfeger and Assoc.	Ward
Snow Storm	Blackhawk	Gilpin	Manion Placer Mines	Blackhawk
Alma	Alma	Park	Jack Richards and Assoc.	Alma
Beaver Creek	Fairplay	Park	Timberline Dredging Company	1716 California Street, Denver
Roberts	Como	Park	F. L. O'Dell	2555 Harlan Blvd., Denver
Snowstorm	Fairplay	Park	Detwiller Leasing Company	Fairplay
Snowstorm	Fairplay	Park	Timberline Dredging Company	1716 California Street, Denver
Snowstorm	Fairplay	Park	S. R. Phillips and Assoc.	Alma
South Platte	Fairplay	Park	South Platte Dredging Company	1805 Mills Tower, San Francisco, California
Tarryall	Como	Park	Cooley Brothers	Como
Bemrose	Breckenridge	Summit	Hoosier Gold Mines, Inc.	746 Equitable Bldg., Denver
Borden Bedrock	Breckenridge	Summit	W. F. VanWinkle and Assoc.	Breckenridge
Louis D.	Breckenridge	Summit	M. L. Miller	Alma

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